GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:25:44 ; Search time 25.597 Seconds
(without alignments)
540.877 Million cell updates/sec

Title: US-09-423-100-1
Perfect score: 260
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_29Jan04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	260	100.0	49	2	AAY42855	Aay42855 Human gro
2	260	100.0	92	2	AAY42856	Aay42856 Human gro
3	260	100.0	107	2	AAY42860	Aay42860 hGH-mini-
4	260	100.0	134	2	AAW92265	Aaw92265 Human ant
5	260	100.0	140	1	AAP91041	Aap91041 Human gro
6	260	100.0	150	2	AAY42861	Aay42861 Chimeric
7	260	100.0	192	1	AAP90129	Aap90129 Human gro
8	260	100.0	192	2	AAW92264	Aaw92264 Human ant
9	260	100.0	261	1	AAP91299	Aap91299 Human ner

10	260	100.0	262	1	AAP61033	Aap61033 Human bet
11	260	100.0	262	2	AAR11740	Aar11740 Human gro
12	260	100.0	310	2	AAR03255	Aar03255 Fusion pr
13	257	98.8	144	2	AAR05313	Aar05313 Segment o
14	256	98.5	204	5	ABB77327	Abb77327 Human gro
15	255	98.1	138	1	AAP81226	Aap81226 Sequence
16	255	98.1	179	5	AAM47922	Aam47922 Human GH-
17	255	98.1	191	1	AAP60016	Aap60016 Sequence
18	255	98.1	191	2	AAO20110	Aao20110 Protein s
19	255	98.1	191	2	AAW71289	Aaw71289 Human gro
20	255	98.1	191	2	AAY15809	Aay15809 Primary a
21	255	98.1	191	2	AAY04397	Aay04397 Mutant hu
22	255	98.1	191	2	AAY04396	Aay04396 Natural h
23	255	98.1	191	3	AAY78425	Aay78425 Human gro
24	255	98.1	191	4	AAO17485	Aao17485 Human gro
25	255	98.1	191	4	AAO17486	Aao17486 Human gro
26	255	98.1	191	5	ABG31865	Abg31865 Mature hu
27	255	98.1	191	5	ABG31863	Abg31863 Mature hu
28	255	98.1	191	5	ABG31859	Abg31859 Mature hu
29	255	98.1	191	5	ABG31860	Abg31860 Mature hu
30	255	98.1	191	5	ABG31866	Abg31866 Mature hu
31	255	98.1	191	5	ABG31857	Abg31857 Mature hu
32	255	98.1	191	5	ABG31861	Abg31861 Mature hu
33	255	98.1	191	5	ABG31862	Abg31862 Mature hu
34	255	98.1	191	5	ABG94887	Abg94887 Human gro
35	255	98.1	191	5	ABG94905	Abg94905 Human gro
36	255	98.1	191	5	ABG94932	Abg94932 Human gro
37	255	98.1	191	5	ABG94967	Abg94967 Human gro
38	255	98.1	191	5	ABG94975	Abg94975 Human gro
39	255	98.1	191	5	ABG94890	Abg94890 Human gro
40	255	98.1	191	5	ABG94894	Abg94894 Human gro
41	255	98.1	191	5	ABG94899	Abg94899 Human gro
42	255	98.1	191	5	ABG94902	Abg94902 Human gro
43	255	98.1	191	5	ABG94925	Abg94925 Human gro
44	255	98.1	191	5	ABG94933	Abg94933 Human gro
45	255	98.1	191	5	ABG94940	Abg94940 Human gro

ALIGNMENTS

RESULT 1
AAY42855
ID AAY42855 standard; protein; 49 AA.
XX
AC AAY42855;
XX
DT 19-JAN-2000 (first entry)
XX
DE Human growth hormone (hGH) N-terminal fragment #1.
XX
KW Growth hormone; chaperone; intramolecular; insulin; precursor; folding;
KW conformation; chimeric protein; cleavable; recombinant; production;
KW yield.
XX
OS Homo sapiens.
XX

PN WO9950302-A1.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1998; 98WO-CN000052.
XX
PR 31-MAR-1998; 98WO-CN000052.
XX
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
XX
PI Gan Z;
XX
DR WPI; 1999-610839/52.
XX
PT New chimeric proteins containing human growth hormone fragment, used
PT particularly for the production of human insulin.
XX
PS Claim 4; Page 28; 46pp; English.
XX
CC This sequence represents an N-terminal fragment of human growth hormone
CC (hGH) which is a component of a chimeric protein, hGH-mini-proinsulin
CC (AAY42860). The hGH portion of the chimeric protein acts as an
CC intramolecular chaperone (IMC) for the insulin precursor, enabling it to
CC fold correctly. A cleavable peptide linker with a C-terminal Arg residue
CC (AAY42857) enables the hGH portion of the chimeric protein to be removed
CC after folding has taken place. Production of recombinant human insulin
CC via an hGH-proinsulin chimeric protein can provide human insulin with
CC correctly linked cysteine bridges with fewer necessary procedural steps,
CC and hence resulting in a higher yield of human insulin. The IMC sequences
CC not only protect insulin sequences from intracellular degradation by a
CC microorganism host, but also promote the folding of the fused insulin
CC precursor, facilitate the solubility of the fusion protein and decrease
CC the intermolecular interactions among the fusion proteins, thus allowing
CC folding of the fused insulin precursor at commercially useful high
CC concentrations. The procedural steps of cyanogen bromide cleavage,
CC oxidative sulphitolysis and related purification steps can thus be
CC eliminated, along with the use of high concentrations of mercaptan or the
CC use of hydrophobic absorbent resins
XX
SQ Sequence 49 AA;

  Query Match   100.0%; Score 260; DB 2; Length 49;
  Best Local Similarity   100.0%; Pred. No. 3.2e-25;
  Matches   49; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 2
AAY42856
ID AAY42856 standard; protein; 92 AA.
XX
AC AAY42856;
XX
DT 19-JAN-2000 (first entry)

XX
DE Human growth hormone (hGH) N-terminal fragment #2.
XX
KW Growth hormone; chaperone; intramolecular; insulin; precursor; folding;
KW conformation; chimeric protein; cleavable; recombinant; production;
KW yield.
XX
OS Homo sapiens.
XX
PN WO9950302-A1.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1998; 98WO-CN000052.
XX
PR 31-MAR-1998; 98WO-CN000052.
XX
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
XX
PI Gan Z;
XX
DR WPI; 1999-610839/52.
XX
PT New chimeric proteins containing human growth hormone fragment, used
PT particularly for the production of human insulin.
XX
PS Claim 5; Page 28; 46pp; English.
XX
CC This sequence represents an N-terminal fragment of human growth hormone
CC (hGH) which is a component of a chimeric protein (AAY42861) which also
CC contains a human insulin precursor (AAY42859). The hGH portion of the
CC chimeric protein acts as an intramolecular chaperone (IMC) for the
CC insulin precursor, enabling it to fold correctly. A cleavable peptide
CC linker with a C-terminal Arg residue (AAY42857) enables the hGH portion
CC of the chimeric protein to be removed after folding has taken place.
CC Production of recombinant human insulin via an hGH-proinsulin chimeric
CC protein can provide human insulin with correctly linked cysteine bridges
CC with fewer necessary procedural steps, and hence resulting in a higher
CC yield of human insulin. The IMC sequences not only protect insulin
CC sequences from intracellular degradation by a microorganism host, but
CC also promote the folding of the fused insulin precursor, facilitate the
CC solubility of the fusion protein and decrease the intermolecular
CC interactions among the fusion proteins, thus allowing folding of the
CC fused insulin precursor at commercially useful high concentrations. The
CC procedural steps of cyanogen bromide cleavage, oxidative sulphitolysis
CC and related purification steps can thus be eliminated, along with the use
CC of high concentrations of mercaptan or the use of hydrophobic absorbent
CC resins
XX
SQ Sequence 92 AA;

Query Match 100.0%; Score 260; DB 2; Length 92;
Best Local Similarity 100.0%; Pred. No. 6.5e-25;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
||||||||||||||||||||||||||||||||||||||||||||||||||

```
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 3
AAY42860
ID   AAY42860 standard; protein; 107 AA.
XX
AC   AAY42860;
XX
DT   19-JAN-2000  (first entry)
XX
DE   hGH-mini-proinsulin chimeric protein.
XX
KW   Insulin; precursor; growth hormone; chaperone; intramolecular; folding;
KW   conformation; chimeric protein; cleavable; recombinant; production;
KW   yield.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9950302-A1.
XX
PD   07-OCT-1999.
XX
PF   31-MAR-1998;   98WO-CN000052.
XX
PR   31-MAR-1998;   98WO-CN000052.
XX
PA   (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
XX
PI   Gan Z;
XX
DR   WPI; 1999-610839/52.
XX
PT   New chimeric proteins containing human growth hormone fragment, used
PT   particularly for the production of human insulin.
XX
PS   Claim 13; Page 30; 46pp; English.
XX
CC   This sequence represents a chimeric protein, hGH-mini-proinsulin. This
CC   chimeric protein contains an N-terminal fragment of human growth hormone
CC   (hGH) of the sequence given in AAY42855, a cleavable peptide linker
CC   (AAY42857), and a human insulin precursor comprising insulin A and B
CC   chains (AAY42859). The hGH portion of the chimeric protein acts as an
CC   intramolecular chaperone (IMC) for the insulin precursor, enabling it to
CC   fold correctly. The cleavable peptide linker has a C-terminal Arg residue
CC   which enables the hGH portion of the chimeric protein to be removed after
CC   folding has taken place. Production of recombinant human insulin via an
CC   hGH-proinsulin chimeric protein can provide human insulin with correctly
CC   linked cysteine bridges with fewer necessary procedural steps, and hence
CC   resulting in a higher yield of human insulin. The IMC sequences not only
CC   protect insulin sequences from intracellular degradation by a
CC   microorganism host, but also promote the folding of the fused insulin
CC   precursor, facilitate the solubility of the fusion protein and decrease
CC   the intermolecular interactions among the fusion proteins, thus allowing
CC   folding of the fused insulin precursor at commercially useful high
CC   concentrations. The procedural steps of cyanogen bromide cleavage,
```

CC oxidative sulphitolysis and related purification steps can thus be
CC eliminated, along with the use of high concentrations of mercaptan or the
CC use of hydrophobic absorbent resins
XX
SQ Sequence 107 AA;

Query Match 100.0%; Score 260; DB 2; Length 107;
Best Local Similarity 100.0%; Pred. No. 7.7e-25;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 4
AAW92265
ID AAW92265 standard; protein; 134 AA.
XX
AC AAW92265;
XX
DT 08-JUN-1999 (first entry)
XX
DE Human anti-angiogenic peptide 16K hGH Met-1Pro133.
XX
KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.
XX
OS Homo sapiens.
XX
PN WO9851323-A1.
XX
PD 19-NOV-1998.
XX
PF 12-MAY-1998; 98WO-US009691.
XX
PR 13-MAY-1997; 97US-0046394P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Weiner RI, Martial JA, Struman I, Taylor R;
XX
DR WPI; 1999-045192/04.
DR N-PSDB; AAX01707.
XX
PT New anti-angiogenic peptides - comprise N-terminal fragments of human
PT placental lactogen, human growth hormone, growth hormone variant or human
PT prolactin.

XX
PS Claim 4; Page 49-50; 87pp; English.
XX
CC This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction
XX
SQ Sequence 134 AA;

Query Match 100.0%; Score 260; DB 2; Length 134;
Best Local Similarity 100.0%; Pred. No. 9.8e-25;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 5
AAP91041
ID AAP91041 standard; protein; 140 AA.
XX
AC AAP91041;
XX
DT 24-OCT-2003 (revised)
DT 14-DEC-1989 (first entry)
XX
DE Human growth hormone segment.
XX
KW Human growth hormone; fusion protein; thrombin; geriatric dementia;
KW nervous disorders; human nerve factor.

XX
OS Homo sapiens; (human).
XX
PN EP329175-A.
XX
PD 23-AUG-1989.
XX
PF 17-FEB-1989; 89EP-00102795.
XX
PR 19-FEB-1988; 88JP-00035042.
XX
PA (TOYJ) TOSOH CORP.
XX
PI Ohtsuka E;
XX
DR WPI; 1989-243092/34.
XX
PT New human nerve growth factor gene encoding fusion protein - having
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.
XX
PS Disclosure; Page 21; 38pp; English.
XX
CC Human growth hormone segment, used at the N-terminal of a fusion protein,
CC which contains a thrombin recognition site, and human beta nerve growth
CC factor (beta-NGF) at the C-terminal. Beta-NGF can be used to control
CC geriatric dementia and other nervous disorders, and can be released from
CC the fusion protein by incubation with thrombin (see AAN90577-8, AAP91034,
CC AAP91299). (Updated on 24-OCT-2003 to standardise OS field)
XX
SQ Sequence 140 AA;

Query Match 100.0%; Score 260; DB 1; Length 140;
Best Local Similarity 100.0%; Pred. No. 1e-24;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
```

RESULT 6
AAY42861
ID AAY42861 standard; protein; 150 AA.
XX
AC AAY42861;
XX
DT 19-JAN-2000 (first entry)
XX
DE Chimeric protein, SEQ ID 7.
XX
KW Insulin; precursor; growth hormone; chaperone; intramolecular; folding;
KW conformation; chimeric protein; cleavable; recombinant; production;
KW yield.
XX
OS Synthetic.
OS Homo sapiens.
XX

PN WO9950302-A1.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1998; 98WO-CN000052.
XX
PR 31-MAR-1998; 98WO-CN000052.
XX
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
XX
PI Gan Z;
XX
DR WPI; 1999-610839/52.
XX
PT New chimeric proteins containing human growth hormone fragment, used
PT particularly for the production of human insulin.
XX
PS Claim 14; Page 30-31; 46pp; English.
XX
CC This sequence represents a chimeric protein, which contains an N-terminal
CC fragment of human growth hormone (hGH) of the sequence given in AAY42856,
CC a cleavable peptide linker (AAY42857), and a human insulin precursor
CC comprising insulin A and B chains (AAY42859). The hGH portion of the
CC chimeric protein acts as an intramolecular chaperone (IMC) for the
CC insulin precursor, enabling it to fold correctly. The cleavable peptide
CC linker has a C-terminal Arg residue which enables the hGH portion of the
CC chimeric protein to be removed after folding has taken place. Production
CC of recombinant human insulin via an hGH-proinsulin chimeric protein can
CC provide human insulin with correctly linked cysteine bridges with fewer
CC necessary procedural steps, and hence resulting in a higher yield of
CC human insulin. The IMC sequences not only protect insulin sequences from
CC intracellular degradation by a microorganism host, but also promote the
CC folding of the fused insulin precursor, facilitate the solubility of the
CC fusion protein and decrease the intermolecular interactions among the
CC fusion proteins, thus allowing folding of the fused insulin precursor at
CC commercially useful high concentrations. The procedural steps of cyanogen
CC bromide cleavage, oxidative sulphitolysis and related purification steps
CC can thus be eliminated, along with the use of high concentrations of
CC mercaptan or the use of hydrophobic absorbent resins
XX
SQ Sequence 150 AA;

  Query Match   100.0%; Score 260; DB 2; Length 150;
  Best Local Similarity   100.0%; Pred. No. 1.1e-24;
  Matches   49; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 7
AAP90129
ID AAP90129 standard; protein; 192 AA.
XX
AC AAP90129;
XX

DT 24-OCT-2003 (revised)
DT 25-MAR-2003 (revised)
DT 06-FEB-1996 (revised)
DT 01-NOV-1989 (first entry)
XX
DE Human growth hormone.
XX
KW Human growth hormone; fusion protein; recombinant vector.
XX
OS Homo sapiens; (Human).
XX
PN JP01144981-A.
XX
PD 07-JUN-1989.
XX
PF 02-DEC-1987; 87JP-00304937.
XX
PR 02-DEC-1987; 87JP-00304937.
XX
PA (WAKT) WAKUNAGA SEIYAKU KK.
XX
DR WPI; 1989-209284/29.
DR N-PSDB; AAN90269.
XX
PT Recombinant vector contg. fused protein aminoacid coding - composed of
PT growth hormone or its polypeptide deriv. and foreign protein.
XX
PS Disclosure; Fig 1; 19pp; Japanese.
XX
CC The invention consists of a vector contg. a fusion protein which is
CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
CC formed by subtstn. of Met-14 with Leu) and a foreign protein. Stability
CC of the vector in the host is greatly increased so the protein yield is
CC higher. (Updated on 25-MAR-2003 to correct PA field.) (Updated on 24-OCT-
CC 2003 to standardise OS field)
XX
SQ Sequence 192 AA;

  Query Match   100.0%; Score 260; DB 1; Length 192;
  Best Local Similarity   100.0%; Pred. No. 1.5e-24;
  Matches   49; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 8
AAW92264
ID AAW92264 standard; protein; 192 AA.
XX
AC AAW92264;
XX
DT 08-JUN-1999 (first entry)
XX
DE Human anti-angiogenic peptide hGH Met-1Phe191.
XX

KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.
XX
OS Homo sapiens.
XX
PN WO9851323-A1.
XX
PD 19-NOV-1998.
XX
PF 12-MAY-1998; 98WO-US009691.
XX
PR 13-MAY-1997; 97US-0046394P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Weiner RI, Martial JA, Struman I, Taylor R;
XX
DR WPI; 1999-045192/04.
DR N-PSDB; AAX01706.
XX
PT New anti-angiogenic peptides - comprise N-terminal fragments of human
PT placental lactogen, human growth hormone, growth hormone variant or human
PT prolactin.
XX
PS Example 3; Page 49; 87pp; English.
XX
CC This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,

CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction
XX
SQ Sequence 192 AA;

Query Match 100.0%; Score 260; DB 2; Length 192;
Best Local Similarity 100.0%; Pred. No. 1.5e-24;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 9
AAP91299
ID AAP91299 standard; protein; 261 AA.
XX
AC AAP91299;
XX
DT 24-OCT-2003 (revised)
DT 14-DEC-1989 (first entry)
XX
DE Human nerve growth factor and human growth hormone fusion protein.
XX
KW Human nerve growth factor; fusion protein; thrombin; geriatric dementia;
KW nervous disorders; human growth hormone.
XX
OS Homo sapiens; (human).
XX
FH Key Location/Qualifiers
FT Region 1. .140
FT Region 141. .143
FT Region 144. .261
XX
PN EP329175-A.
XX
PD 23-AUG-1989.
XX
PF 17-FEB-1989; 89EP-00102795.
XX
PR 19-FEB-1988; 88JP-00035042.
XX
PA (TOYJ) TOSOH CORP.
XX
PI Ohtsuka E;
XX
DR WPI; 1989-243092/34.
XX
PT New human nerve growth factor gene encoding fusion protein - having
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.
XX

PS Claim 36; Page 31-32; 38pp; English.
XX
CC Fusion protein consisting of human growth hormone at the N-terminal end
CC (1st region), a 3 amino acid sequence representing thrombin recognition
CC site, and human beta nerve growth factor (beta-NGF) at the C-terminal.
CC Beta-NGF can be used to control geriatric dementia and other nervous
CC disorders, and can be released from the fusion protein by incubation with
CC thrombin (see AAN90577-8, AAP91034, AAP91041). (Updated on 24-OCT-2003 to
CC standardise OS field)
XX
SQ Sequence 261 AA;

Query Match 100.0%; Score 260; DB 1; Length 261;
Best Local Similarity 100.0%; Pred. No. 2e-24;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 10
AAP61033
ID AAP61033 standard; protein; 262 AA.
XX
AC AAP61033;
XX
DT 25-OCT-1991 (first entry)
XX
DE Human beta-nerve growth factor gene product.
XX
KW Beta-NGF; E.coli; ds.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Protein 145. .262
XX
PN JP61205485-A.
XX
PD 11-SEP-1986.
XX
PF 09-MAR-1985; 85JP-00045773.
XX
PR 09-MAR-1985; 85JP-00045773.
XX
PA (OTSU/) OTSUKA E.
XX
DR WPI; 1986-281696/43.
XX
PT Gene segment of human nerve growth factor - used in prodn. of NGF-
PT producing recombinant Escherichia strain.
XX
PS Claim 32; Page 482; 71pp; Japanese.
XX
CC The protein is a direct translation of the upstream tryptophan promoter-
CC operator lacking its attenuation sequence and human beta-NGF sequence.

CC The product may be efficiently expressed from a transformed E.coli
CC expression system. See also AAN60816-7
XX
SQ Sequence 262 AA;

Query Match 100.0%; Score 260; DB 1; Length 262;
Best Local Similarity 100.0%; Pred. No. 2.1e-24;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 11
AAR11740
ID AAR11740 standard; protein; 262 AA.
XX
AC AAR11740;
XX
DT 25-MAR-2003 (revised)
DT 25-JUN-1991 (first entry)
XX
DE Human growth hormone/human nerve growth factor beta fusion protein.
XX
KW hGH; hNGF; nervous system diseases; dementia.
XX
OS Homo sapiens.
XX
PN JP03067598-A.
XX
PD 22-MAR-1991.
XX
PF 07-AUG-1989; 89JP-00202835.
XX
PR 07-AUG-1989; 89JP-00202835.
XX
PA (TOYJ) TOSOH CORP.
XX
DR WPI; 1991-128768/18.
DR N-PSDB; AAQ11578.
XX
PT Purificn. of human neuron growth factor beta-sub:unit-contg. protein - by
PT contacting with gel having cation exchange gp. in presence of urea.
XX
PS Disclosure; Fig 1; 7pp; Japanese.
XX
CC A recombinant human nerve growth factor beta subunit-contg. protein can
CC be produced as this fusion protein. It is purified by contacting a gel
CC having a cation exchange gp. with the fusion protein, in the presence of
CC urea. The purified protein is useful in a medicament for treating
CC disorders of the nervous system, eg dementia. (Updated on 25-MAR-2003 to
CC correct PF field.)
XX
SQ Sequence 262 AA;

Query Match 100.0%; Score 260; DB 2; Length 262;

Best Local Similarity 100.0%; Pred. No. 2.1e-24;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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RESULT 12
AAR03255
ID AAR03255 standard; protein; 310 AA.
XX
AC AAR03255;
XX
DT 19-JUL-1990 (first entry)
XX
DE Fusion protein of B-cell stimulatory factor-2 and B-cell differentiation
DE factor.
XX
KW B-cell stimulatory factor-2; interleukin-6; B-cell differentiation;
KW interleukin-5; fusion protein.
XX
OS Homo sapiens.
XX
PN JP02013375-A.
XX
PD 17-JAN-1990.
XX
PF 01-JUL-1988; 88JP-00162556.
XX
PR 01-JUL-1988; 88JP-00162556.
XX
PA (TOYJ) TOSOH CORP.
XX
DR WPI; 1990-062207/09.
DR N-PSDB; AAQ02028.
XX
PT Prepn. of human B cell differentiation factor - from specified DNA
PT sequence segment, by recombinant DNA technique, gives protein of
PT specified amino acid sequence.
XX
PS Claim 31; Page 9; 17pp; Japanese.
XX
CC The protein is produced by fusing DNA encoding BDF (IL-) with DNA
CC encoding BSF-2 (IL-5)and ligating the product into an expression vector
CC See also AAR05311 and AAR05313
XX
SQ Sequence 310 AA;

Query Match 100.0%; Score 260; DB 2; Length 310;
Best Local Similarity 100.0%; Pred. No. 2.5e-24;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
```

RESULT 13
AAR05313
ID   AAR05313 standard; protein; 144 AA.
XX
AC   AAR05313;
XX
DT   19-JUL-1990 (first entry)
XX
DE   Segment of B-cell stimulatory factor-2 (IL-5).
XX
KW   B-cell stimulatory factor-2; interleukin-5.
XX
OS   Homo sapiens.
XX
PN   JP02013375-A.
XX
PD   17-JAN-1990.
XX
PF   01-JUL-1988;   88JP-00162556.
XX
PR   01-JUL-1988;   88JP-00162556.
XX
PA   (TOYJ) TOSOH CORP.
XX
DR   WPI; 1990-062207/09.
DR   N-PSDB; AAQ02028.
XX
PT   Prepn. of human B cell differentiation factor - from specified DNA
PT   sequence segment, by recombinant DNA technique, gives protein of
PT   specified amino acid sequence.
XX
PS   Disclosure; Page 9; 17pp; Japanese.
XX
CC   The sequence encoding this protein can be fused with DNA encoding B-cell
CC   differentiation factor (IL-6) and ligated into an expression vector for
CC   prodn. of a fusion protein. See also AAR05311
XX
SQ   Sequence 144 AA;

  Query Match   98.8%; Score 257; DB 2; Length 144;
  Best Local Similarity   98.0%; Pred. No. 2.5e-24;
  Matches   48; Conservative   1; Mismatches   0; Indels   0; Gaps   0;

Qy   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||:||
Db   1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLENP 49

RESULT 14
ABB77327
ID   ABB77327 standard; protein; 204 AA.
XX
AC   ABB77327;
XX
DT   17-JUN-2002 (first entry)
XX

DE Human growth hormone with collagenase recognition site.
XX
KW Human; growth hormone; collagenase; recognition site.
XX
OS Homo sapiens.
XX
PN KR289691-B.
XX
PD 15-MAY-2001.
XX
PF 28-DEC-1993; 93KR-00030318.
XX
PR 28-DEC-1993; 93KR-00030318.
XX
PA (GLDS) LG CHEM LTD.
XX
PI Yoo JG, Song YH;
XX
DR WPI; 2002-185396/24.
DR N-PSDB; ABL55999.
XX
PT Recombinant human growth hormone having collagenase recognition region.
XX
PS Disclosure; Fig 3; 8pp; Korean.
XX
CC The invention relates to recombinant human growth hormone having a
CC collagenase recognition region
XX
SQ Sequence 204 AA;

  Query Match   98.5%; Score 256; DB 5; Length 204;
  Best Local Similarity   98.0%; Pred. No. 4.9e-24;
  Matches   48; Conservative   1; Mismatches   0; Indels   0; Gaps   0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db         13 VFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 61
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RESULT 15
AAP81226
ID AAP81226 standard; protein; 138 AA.
XX
AC AAP81226;
XX
DT 25-MAR-2003 (revised)
DT 20-NOV-1990 (first entry)
XX
DE Sequence of protein with somatomedin-like activity.
XX
KW Growth hormone.
XX
OS Synthetic.
XX
PN JP63167798-A.
XX
PD 11-JUL-1988.

XX
PF 29-DEC-1986; 86JP-00310177.
XX
PR 29-DEC-1986; 86JP-00310177.
XX
PA (TOYJ) TOYO SODA MFG CO LTD.
XX
DR WPI; 1988-232632/33.
DR N-PSDB; AAN81605.
XX
PT Polypeptide with somatomedin-like activity - by culturing bacterium
PT transformed by plasmid contg. gene segment with specified DNA sequence.
XX
PS Claim 2(1); Page 609; 9pp; Japanese.
XX
CC The polypeptide (AAP81226) with somatomedin-like activity and the DNA
CC (AAN81605) encoding it are claimed. A Met resicual gp. may be added to
CC the N-terminal. The polypeptide acts on the bone structure of mammals,
CC including humans, to promote bone growth. The polypeptide has high
CC production rate and is easily extracted from bacterial culture medium and
CC refined for use as a bone growth accelerator. (Updated on 25-MAR-2003 to
CC correct PA field.)
XX
SQ Sequence 138 AA;

Query Match 98.1%; Score 255; DB 1; Length 138;
Best Local Similarity 100.0%; Pred. No. 4.3e-24;
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 48
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Search completed: July 15, 2004, 16:35:31
Job time : 27.597 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:30:45 ; Search time 7.40485 Seconds
(without alignments)
341.624 Million cell updates/sec

Title: US-09-423-100-1
Perfect score: 260
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
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6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	260	100.0	192	1	US-08-093-383-1	Sequence 1, Appli
2	255	98.1	191	4	US-09-284-878-5	Sequence 5, Appli
3	255	98.1	191	4	US-09-462-941-1	Sequence 1, Appli
4	255	98.1	191	4	US-09-554-451-1	Sequence 1, Appli
5	255	98.1	194	2	US-08-383-621-4	Sequence 4, Appli
6	255	98.1	194	3	US-08-459-906-4	Sequence 4, Appli
7	255	98.1	217	3	US-08-589-028-10	Sequence 10, Appl
8	255	98.1	217	3	US-08-784-582-10	Sequence 10, Appl
9	255	98.1	217	3	US-08-785-271-10	Sequence 10, Appl
10	255	98.1	217	3	US-08-759-628-11	Sequence 11, Appl
11	255	98.1	217	4	US-09-284-878-1	Sequence 1, Appli

12	255	98.1	217	4	US-09-511-024A-1	Sequence 1, Appli
13	255	98.1	241	4	US-09-424-620B-25	Sequence 25, Appl
14	255	98.1	245	4	US-09-280-030-66	Sequence 66, Appl
15	255	98.1	274	3	US-08-784-582-71	Sequence 71, Appl
16	255	98.1	360	3	US-08-784-582-73	Sequence 73, Appl
17	250	96.2	191	4	US-09-554-451-3	Sequence 3, Appli
18	249	95.8	191	4	US-09-465-461-1	Sequence 1, Appli
19	249	95.8	217	1	US-08-187-756C-4	Sequence 4, Appli
20	249	95.8	217	1	US-08-469-486-51	Sequence 51, Appl
21	249	95.8	217	2	US-08-469-658-51	Sequence 51, Appl
22	249	95.8	217	2	US-08-710-324A-4	Sequence 4, Appli
23	249	95.8	217	4	US-09-411-657-4	Sequence 4, Appli
24	248	95.4	191	3	US-08-800-215C-16	Sequence 16, Appl
25	248	95.4	191	3	US-08-800-215C-18	Sequence 18, Appl
26	248	95.4	191	3	US-08-800-215C-20	Sequence 20, Appl
27	248	95.4	400	4	US-09-420-819-37	Sequence 37, Appl
28	248	95.4	401	4	US-09-420-819-36	Sequence 36, Appl
29	246	94.6	191	4	US-09-511-024A-4	Sequence 4, Appli
30	246	94.6	191	4	US-09-511-024A-5	Sequence 5, Appli
31	243	93.5	191	4	US-09-511-024A-9	Sequence 9, Appli
32	242	93.1	191	4	US-09-511-024A-3	Sequence 3, Appli
33	242	93.1	191	4	US-09-511-024A-6	Sequence 6, Appli
34	237	91.2	71	1	US-08-314-586-24	Sequence 24, Appl
35	233	89.6	70	1	US-07-920-519-24	Sequence 24, Appl
36	233	89.6	70	3	US-08-115-753-26	Sequence 26, Appl
37	226	86.9	191	4	US-09-511-024A-7	Sequence 7, Appli
38	222	85.4	190	4	US-09-511-024A-13	Sequence 13, Appl
39	218	83.8	191	4	US-09-511-024A-8	Sequence 8, Appli
40	215	82.7	190	4	US-09-511-024A-10	Sequence 10, Appl
41	215	82.7	190	4	US-09-511-024A-12	Sequence 12, Appl
42	212	81.5	190	4	US-09-511-024A-11	Sequence 11, Appl
43	164.5	63.3	191	1	US-08-468-824-8	Sequence 8, Appli
44	164	63.1	176	3	US-08-791-728-1	Sequence 1, Appli
45	164	63.1	176	4	US-08-990-774-1	Sequence 1, Appli

ALIGNMENTS

```
RESULT 1
US-08-093-383-1
; Sequence 1, Application US/08093383
; Patent No. 5489529
;  GENERAL INFORMATION:
;    APPLICANT:  DeBoer, Herman A.
;    APPLICANT:  Heyneker, Herbert L.
;    APPLICANT:  Seeburg, Peter H.
;    TITLE OF INVENTION:  DNA for Expression of Bovine Growth Hormone
;    NUMBER OF SEQUENCES:  30
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  460 Point San Bruno Blvd
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
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;       MEDIUM TYPE:  5.25 inch, 360 Kb floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  patin (Genentech)
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/093,383
;       FILING DATE:  14-JUL-1993
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  07/619827
;       FILING DATE:  28-NOV-1990
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  07/198824
;       FILING DATE:  05-APR-1988
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  06/632361
;       FILING DATE:  19-JUL-1984
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  06/303687
;       FILING DATE:  18-SEP-1981
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Johnston, Sean A.
;       REGISTRATION NUMBER:  P35,910
;       REFERENCE/DOCKET NUMBER:  46C4
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  415/225-3562
;       TELEFAX:  415/952-9881
;       TELEX:  910/371-7168
;   INFORMATION FOR SEQ ID NO:  1:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  192 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
US-08-093-383-1

  Query Match             100.0%;  Score 260;  DB 1;  Length 192;
  Best Local Similarity   100.0%;  Pred. No. 5.6e-30;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 2
US-09-284-878-5
; Sequence 5, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
;  APPLICANT:  Olazaran, Martha Guerrero
;  APPLICANT:  Saldana, Hugo Barrera
;  APPLICANT:  Salvado, Jose Maria Viader
;  TITLE OF INVENTION:  Genetically Modified Methylotrophic P. pastoris Yeast
for the
;  TITLE OF INVENTION:  Production and Secretion of the Human Growth Hormone
;  FILE REFERENCE:  1829.0010000
;  CURRENT APPLICATION NUMBER: US/09/284,878
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;  CURRENT FILING DATE:  1999-07-21
;  PRIOR APPLICATION NUMBER:  PCT/MX97/00033
;  PRIOR FILING DATE:  1997-10-24
;  NUMBER OF SEQ ID NOS:  9
;  SOFTWARE:  PatentIn Ver. 2.1
; SEQ ID NO 5
;   LENGTH: 191
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-284-878-5

  Query Match             98.1%;  Score 255;  DB 4;  Length 191;
  Best Local Similarity   100.0%;  Pred. No. 3e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 48


RESULT 3
US-09-462-941-1
; Sequence 1, Application US/09462941
; Patent No. 6608183
; GENERAL INFORMATION:
;  APPLICANT: Cox III, George N
;  APPLICANT:  Bolder Biotechnology, Inc.
;  TITLE OF INVENTION: Derivatives of Growth Hormone and Related Proteins
;  FILE REFERENCE: 4152-1-PUS
;  CURRENT APPLICATION NUMBER: US/09/462,941
;  CURRENT FILING DATE:  2000-01-14
;  PRIOR APPLICATION NUMBER: 60/052,516
;  PRIOR FILING DATE: 1997-07-14
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
;   LENGTH: 191
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-462-941-1

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  Best Local Similarity   100.0%;  Pred. No. 3e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 48


RESULT 4
US-09-554-451-1
; Sequence 1, Application US/09554451
; Patent No. 6680207
;   GENERAL INFORMATION:
;        APPLICANT: Jonathan Paul MURPHY
;                   Anthony ATKINSON
```

```
;         TITLE OF INVENTION: Detection of Molecules in Samples
;         NUMBER OF SEQUENCES: 9
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Pillsbury Winthrop, L.L.P.
;              STREET: 1100 New York Ave., N.W.
;              CITY: Washington
;              STATE: D.C.
;              COUNTRY: U.S.A.
;              ZIP: 20005
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: Diskette
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: MS Word
;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/09/554,451
;              FILING DATE: 15-May-2000
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: PCT/GB98/03449
;              FILING DATE: No. 6680207ember 16, 1998
;              APPLICATION NUMBER: GB 9723955.2
;              FILING DATE: No. 6680207ember 14, 1997
;    INFORMATION FOR SEQ ID NO: 1:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 191 amino acids
;              TYPE: amino acid
;              STRANDEDNESS: single
;              TOPOLOGY: linear
;         SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-09-554-451-1

  Query Match             98.1%;  Score 255;  DB 4;  Length 191;
  Best Local Similarity   100.0%;  Pred. No. 3e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 48


RESULT 5
US-08-383-621-4
; Sequence 4, Application US/08383621
; Patent No. 5951972
;  GENERAL INFORMATION:
;    APPLICANT:  Daley, Michael J.
;    APPLICANT:  Buckwalter, Brian L.
;    APPLICANT:  Cady, Susan M.
;    APPLICANT:  Shieh, Hong-Ming
;    APPLICANT:  Bohlen, Peter
;    APPLICANT:  Seddon, Andrew P.
;    TITLE OF INVENTION:  Stabilization Of Somatotropins And Other
;    TITLE OF INVENTION:  Proteins By Modification Of Cysteine Residues
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Dr. Estelle J. Tsevdos
```

```
;       STREET:  1937 West Main Street, P.O. Box 60
;       CITY:  Stamford
;       STATE:  Connecticut
;       COUNTRY:  U.S.A.
;       ZIP:  06904-0060
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/383,621
;       FILING DATE:  06-FEB-1995
;       CLASSIFICATION:  514
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 07/766,142
;       FILING DATE:  25-SEP-1991
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Tsevdos, Estelle J.
;       REGISTRATION NUMBER:  31,145
;       REFERENCE/DOCKET NUMBER:  31,278-01
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  203-321-2756
;       TELEFAX:  203-321-2971
;       TELEX:  203-710-474-4059
;   INFORMATION FOR SEQ ID NO:  4:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  194 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-383-621-4

  Query Match             98.1%;  Score 255;  DB 2;  Length 194;
  Best Local Similarity   100.0%;  Pred. No. 3e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db          4 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 51


RESULT 6
US-08-459-906-4
; Sequence 4, Application US/08459906
; Patent No. 6010999
;  GENERAL INFORMATION:
;    APPLICANT:  Daley, Michael J.
;    APPLICANT:  Buckwalter, Brian L.
;    APPLICANT:  Cady, Susan M.
;    APPLICANT:  Shieh, Hong-Ming
;    APPLICANT:  Bohlen, Peter
;    APPLICANT:  Seddon, Andrew P.
;    TITLE OF INVENTION:  Stabilization of Somatotropins and Other
;    TITLE OF INVENTION:  Proteins by Modification of Cysteine Residues
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
```

```
;       ADDRESSEE:  American Cyanamid Company
;       STREET:  One Cyanamid Plaza
;       CITY:  Wayne
;       STATE:  New Jersey
;       COUNTRY:  U.S.A.
;       ZIP:  07470-8426
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/459,906
;       FILING DATE:  02-JUN-1995
;       CLASSIFICATION:  514
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Webster, Darryl L.
;       REGISTRATION NUMBER:  34,276
;       REFERENCE/DOCKET NUMBER:  31,278-03
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  201-831-3247
;       TELEFAX:  201-831-3305
;   INFORMATION FOR SEQ ID NO:  4:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  194 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-459-906-4

  Query Match             98.1%;  Score 255;  DB 3;  Length 194;
  Best Local Similarity   100.0%;  Pred. No. 3e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db          4 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 51


RESULT 7
US-08-589-028-10
; Sequence 10, Application US/08589028
; Patent No. 6087129
;  GENERAL INFORMATION:
;     APPLICANT:  Newgard, Christopher B.
;     APPLICANT:  Halban, Philippe
;     APPLICANT:  No. 6087129mington, Karl D.
;     APPLICANT:  Clark, Samuel A.
;     APPLICANT:  Thigpen, Anice E.
;     APPLICANT:  Quaade, Christian
;     APPLICANT:  Kruse, Fred
;     TITLE OF INVENTION:  Recombinant Expression of Proteins From
;     TITLE OF INVENTION:  Secretory Cell Lines
;     NUMBER OF SEQUENCES:  50
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Arnold, White & Durkee
;       STREET:  P. O. Box 4433
```

```
;       CITY:  Houston
;       STATE:  TX
;       COUNTRY:  USA
;       ZIP:  77210-4433
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/589,028
;       FILING DATE:  Concurrently Herewith
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Highlander, Steven L.
;       REGISTRATION NUMBER:  47,642
;       REFERENCE/DOCKET NUMBER:  UTSD:426\HYL
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (512) 418-3000
;       TELEFAX:  (512) 474-7577
;   INFORMATION FOR SEQ ID NO:  10:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  217 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
US-08-589-028-10

  Query Match             98.1%;  Score 255;  DB 3;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 3.5e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 8
US-08-784-582-10
; Sequence 10, Application US/08784582
; Patent No. 6110707
;  GENERAL INFORMATION:
;    APPLICANT:  Newgard, Christopher B.
;    APPLICANT:  Halban, Philippe A.
;    APPLICANT:  No. 6110707mington, Karl D.
;    APPLICANT:  Clark, Samuel A.
;    APPLICANT:  Thigpen, Anice E.
;    APPLICANT:  Quaade, Christian
;    APPLICANT:  Kruse, Fred
;    APPLICANT:  McGarry, Dennis
;    TITLE OF INVENTION:  RECOMBINANT EXPRESSION OF PROTEINS FROM
;    TITLE OF INVENTION:  SECRETORY CELL LINES
;    NUMBER OF SEQUENCES:  79
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
```

```
;       STATE:  Texas
;       COUNTRY:  USA
;       ZIP:  77210
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/784,582
;       FILING DATE:  Concurrently Herewith
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 60/028,427
;       FILING DATE:  15-OCT-1996
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/589,028
;       FILING DATE:  19-JAN-1996
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Highlander, Steven L.
;       REGISTRATION NUMBER:  37,642
;       REFERENCE/DOCKET NUMBER:  UTSD:514
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  512/418-3000
;       TELEFAX:  512/474-7577
;   INFORMATION FOR SEQ ID NO:  10:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  217 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
US-08-784-582-10

  Query Match             98.1%;  Score 255;  DB 3;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 3.5e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 9
US-08-785-271-10
; Sequence 10, Application US/08785271
; Patent No. 6194176
;  GENERAL INFORMATION:
;    APPLICANT:  Newgard, Christopher B.
;    APPLICANT:  Halban, Philippe A.
;    APPLICANT:  No. 6194176mington, Karl D.
;    APPLICANT:  Clark, Samuel A.
;    APPLICANT:  Thigpen, Anice E.
;    APPLICANT:  Quaade, Christian
;    APPLICANT:  Kruse, Fred
;    TITLE OF INVENTION:  RECOMBINANT EXPRESSION OF PROTEINS FROM
;    TITLE OF INVENTION:  SECRETORY CELL LINES
;    NUMBER OF SEQUENCES:  56
```

```
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Arnold, White & Durkee
;       STREET:  P.O. Box 4433
;       CITY:  Houston
;       STATE:  Texas
;       COUNTRY:  USA
;       ZIP:  77210
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/785,271
;       FILING DATE:  Concurrently Herewith
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/589,028
;       FILING DATE:  19-JAN-1996
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Highlander, Steven L.
;       REGISTRATION NUMBER:  37,642
;       REFERENCE/DOCKET NUMBER:  UTSD:513
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  512/418-3000
;       TELEFAX:  512/474-7577
;   INFORMATION FOR SEQ ID NO:  10:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  217 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
US-08-785-271-10

  Query Match             98.1%;  Score 255;  DB 3;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 3.5e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 10
US-08-759-628-11
; Sequence 11, Application US/08759628
; Patent No. 6225446
;  GENERAL INFORMATION:
;     APPLICANT:  Altmann, Scott W.
;     APPLICANT:  Rock, Fernando L.
;     APPLICANT:  Bazan, J. Fernando
;     APPLICANT:  Kastelein, Robert A.
;     TITLE OF INVENTION:  MUTATIONAL VARIANTS OF MAMMLIAN PROTEINS
;     NUMBER OF SEQUENCES:  11
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  DNAX Research Institute
;       STREET:  901 California Avenue
```

```
;       CITY:  Palo Alto
;       STATE:  California
;       COUNTRY:  USA
;       ZIP:  94304-1104
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/759,628
;       FILING DATE:  05-DEC-1996
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 60/008,574
;       FILING DATE:  06-DEC-1995
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Ching, Edwin P.
;       REGISTRATION NUMBER:  34,090
;       REFERENCE/DOCKET NUMBER:  DX0552Q
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  415-852-9196
;       TELEFAX:  415-496-1200
;   INFORMATION FOR SEQ ID NO:  11:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  217 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     FEATURE:
;       NAME/KEY:  Peptide
;       LOCATION:  32..53
;     FEATURE:
;       NAME/KEY:  Peptide
;       LOCATION:  94..115
;     FEATURE:
;       NAME/KEY:  Peptide
;       LOCATION:  133..153
;     FEATURE:
;       NAME/KEY:  Peptide
;       LOCATION:  192..210
;       OTHER INFORMATION:  /note= "The peptides above are
;       OTHER INFORMATION:  depicted in Figure 1"
US-08-759-628-11

  Query Match             98.1%;  Score 255;  DB 3;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 3.5e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 11
US-09-284-878-1
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; Sequence 1, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
; APPLICANT: Olazaran, Martha Guerrero
; APPLICANT: Saldana, Hugo Barrera
; APPLICANT: Salvado, Jose Maria Viader
; TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
; FILE REFERENCE: 1829.0010000
; CURRENT APPLICATION NUMBER: US/09/284,878
; CURRENT FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; PRIOR FILING DATE: 1997-10-24
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 1
; LENGTH: 217
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-1

Query Match 98.1%; Score 255; DB 4; Length 217;
Best Local Similarity 100.0%; Pred. No. 3.5e-29;
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74
```

RESULT 12
US-09-511-024A-1
; Sequence 1, Application US/09511024A
; Patent No. 6634554
; GENERAL INFORMATION:
; APPLICANT: Filikov, Anton
; APPLICANT: Dahiyat, Bassil I.
; TITLE OF INVENTION: NOVEL NUCLEIC ACIDS AND PROTEINS WITH GROWTH HORMONE ACTIVITY
; FILE REFERENCE: A-67477-1/RFT/RMS/RMK
; CURRENT APPLICATION NUMBER: US/09/511,024A
; CURRENT FILING DATE: 2002-05-06
; PRIOR APPLICATION NUMBER: US 60/133,784
; PRIOR FILING DATE: 1999-05-12
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 217
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: SIGNAL
; LOCATION: (1)..(26)
; OTHER INFORMATION:
; FEATURE:
; NAME/KEY: mat_peptide

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;   LOCATION: (27)..()
;   OTHER INFORMATION:
US-09-511-024A-1

  Query Match             98.1%;  Score 255;  DB 4;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 3.5e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 13
US-09-424-620B-25
; Sequence 25, Application US/09424620B
; Patent No. 6391585
;   GENERAL INFORMATION:
;        APPLICANT: HANIL SYNTHETIC FIBER CO., LTD.
;                   JANG. Ki-Ryong
;                   MOON, Jae-Woong
;                   BAE, Cheon-Soon
;                   YANG, Doo-Suk
;                   LEE, Jee-Won
;                   SEONG, Baik-Lin
;        TITLE OF INVENTION: Process for preparing recombinant proteins using
highly
;                            efficient expression vector from Sacharomyces
cerevisiae
;        NUMBER OF SEQUENCES: 25
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: BACHMAN & LAPOINTE, P.C.
;             STREET: Suite 1201, 900 Chapel Street
;             CITY: New Haven
;             STATE: Connecticut
;             COUNTRY: U.S.A.
;             ZIP: 06510-2802
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette, 3.5 inch, 1.44 Mb storage
;             COMPUTER: IBM
;             OPERATING SYSTEM: WINDOWS 95/98
;             SOFTWARE: MS WORD
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/424,620B
;             FILING DATE: 24-No. 6391585-1999
;   INFORMATION FOR SEQ ID NO: 25:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 241 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: PROTEIN
;        SEQUENCE DESCRIPTION: SEQ ID NO: 25:
US-09-424-620B-25

  Query Match             98.1%;  Score 255;  DB 4;  Length 241;
  Best Local Similarity   100.0%;  Pred. No. 4e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
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Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         51 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 98
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RESULT 14
US-09-280-030-66
; Sequence 66, Application US/09280030A
; Patent No. 6506595
; GENERAL INFORMATION:
; APPLICANT: Sato, Seiji
; APPLICANT: Higashikuni, Naohiko
; APPLICANT: Kudo, Toshiyuki
; APPLICANT: Kondo, Masaaki
; TITLE OF INVENTION: DNAS ENCODING NEW FUSION PROTEINS AND PROCESSES FOR
; TITLE OF INVENTION: PREPARING USEFUL POLYPEPTIDES THROUGH EXPRESSION OF THE
; TITLE OF INVENTION: DNAS
; FILE REFERENCE: 382.1026
; CURRENT APPLICATION NUMBER: US/09/280,030A
; CURRENT FILING DATE: 1999-03-26
; EARLIER APPLICATION NUMBER: JP10-87339/1998
; EARLIER FILING DATE: 1998-03-31
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 66
; LENGTH: 245
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Designated is
; OTHER INFORMATION: an amino acid sequence of MWPsp-MWPmp20-TEV-G-GH
US-09-280-030-66

Query Match 98.1%; Score 255; DB 4; Length 245;
Best Local Similarity 100.0%; Pred. No. 4.1e-29;
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         55 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 102
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RESULT 15
US-08-784-582-71
; Sequence 71, Application US/08784582
; Patent No. 6110707
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6110707mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quaade, Christian
; APPLICANT: Kruse, Fred
; APPLICANT: McGarry, Dennis
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM

```
;     TITLE OF INVENTION:  SECRETORY CELL LINES
;     NUMBER OF SEQUENCES:  79
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Arnold, White & Durkee
;       STREET:  P.O. Box 4433
;       CITY:  Houston
;       STATE:  Texas
;       COUNTRY:  USA
;       ZIP:  77210
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/784,582
;       FILING DATE:  Concurrently Herewith
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 60/028,427
;       FILING DATE:  15-OCT-1996
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/589,028
;       FILING DATE:  19-JAN-1996
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Highlander, Steven L.
;       REGISTRATION NUMBER:  37,642
;       REFERENCE/DOCKET NUMBER:  UTSD:514
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  512/418-3000
;       TELEFAX:  512/474-7577
;   INFORMATION FOR SEQ ID NO:  71:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  274 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
US-08-784-582-71

  Query Match             98.1%;  Score 255;  DB 3;  Length 274;
  Best Local Similarity   100.0%;  Pred. No. 4.7e-29;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


Search completed: July 15, 2004, 16:42:30
Job time : 9.40485 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:29:19 ; Search time 5.48507 Seconds
(without alignments)
859.311 Million cell updates/sec

Title: US-09-423-100-1
Perfect score: 260
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	255	98.1	217	1	STHU	somatotropin 1 pre
2	255	98.1	217	2	I67410	somatotropin - rhe
3	228	87.7	217	1	STHUV	somatotropin 2 pre
4	228	87.7	256	1	STHUV2	somatotropin 2 pre
5	213	81.9	212	2	I67408	chorionic somatoma
6	213	81.9	217	2	I53267	chorionic somatoma
7	205	78.8	217	2	I67411	somatotropin - rhe
8	201	77.3	217	2	I67409	chorionic somatoma
9	197	75.8	215	2	A26449	choriomammotropin
10	197	75.8	217	1	LCHUC	choriomammotropin
11	197	75.8	217	2	E32435	choriomammotropin
12	161.5	62.1	216	1	STMS	somatotropin precu
13	160.5	61.7	190	2	PN0140	somatotropin - sei

14	159.5	61.3	190	1	STHO	somatotropin - hor
15	159.5	61.3	190	2	JK0219	somatotropin - Afr
16	159.5	61.3	190	2	JS0429	somatotropin - Arc
17	159.5	61.3	216	1	STRT	somatotropin precu
18	159.5	61.3	216	1	STPG	somatotropin precu
19	159.5	61.3	216	2	I46145	somatotropin precu
20	159.5	61.3	216	2	S49483	somatotropin precu
21	159.5	61.3	216	2	B49159	somatotropin - gol
22	159.5	61.3	216	2	JC4632	somatotropin precu
23	156.5	60.2	216	2	A37782	somatotropin precu
24	155.5	59.8	190	1	A61584	somatotropin - alp
25	150	57.7	216	2	JC1514	somatotropin precu
26	148	56.9	191	2	A60625	somatotropin - gre
27	146	56.2	163	2	JN0387	somatotropin - sei
28	144	55.4	190	2	S21750	somatotropin - Rus
29	144	55.4	216	2	A60509	somatotropin precu
30	142.5	54.8	217	1	STBO	somatotropin precu
31	142.5	54.8	217	1	STSH	somatotropin precu
32	142.5	54.8	217	1	STGT	somatotropin precu
33	142.5	54.8	217	2	S32682	somatotropin - dom
34	140	53.8	216	2	S04929	somatotropin precu
35	132	50.8	190	2	A56816	somatotropin - bul
36	132	50.8	215	2	I51188	somatotropin - bul
37	128	49.2	195	2	I51250	somatotropin - bow
38	128	49.2	215	2	JS0037	somatotropin precu
39	122	46.9	199	2	B32435	choriomammotropin-
40	116	44.6	183	2	A60623	somatotropin - blu
41	98.5	37.9	87	4	I67761	EST/beta-Gal mutan
42	97	37.3	200	2	I51114	growth hormone - g
43	87	33.5	210	2	S69263	growth hormone II
44	87	33.5	210	2	S69262	growth hormone I p
45	87	33.5	210	2	S02764	somatotropin precu

ALIGNMENTS

RESULT 1
STHU
somatotropin 1 precursor [validated] - human
N;Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
N;Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short form
C;Species: Homo sapiens (man)
C;Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 08-Dec-2000
C;Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217; A92311; A61466; S09685; I84549; A01510
R;DeNoto, F.M.; Moore, D.D.; Goodman, H.M.
Nucleic Acids Res. 9, 3719-3730, 1981
A;Title: Human growth hormone DNA sequence and mRNA structure: possible alternative splicing.
A;Reference number: A93731; MUID:82014939; PMID:6269091
A;Accession: A93731
A;Molecule type: DNA
A;Residues: 1-217 <DEN>
A;Cross-references: GB:V00520

A;Note: the 20K short form somatotropin lacks residues 58-72 (32-46 in the active hormone) as the result of splicing at the alternate junction of the second intron during mRNA processing
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: A32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52549.1; PID:g183149
R;Roskam, W.; Rougeon, F.
Nucleic Acids Res. 7, 305-320, 1979
A;Title: Molecular cloning and nucleotide sequence of the human growth hormone structural gene.
A;Reference number: A93694; MUID:80034477; PMID:386281
A;Accession: A93694
A;Molecule type: mRNA
A;Residues: 1-217 <ROS>
A;Cross-references: GB:V00519
A;Note: 35-Pro was also found
R;Martial, J.A.; Hallewell, R.A.; Baxter, J.D.; Goodman, H.M.
Science 205, 602-607, 1979
A;Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
A;Reference number: A94247; MUID:79203293; PMID:377496
A;Accession: A94247
A;Molecule type: mRNA
A;Residues: 1-217 <MAR>
R;Li, C.H.; Dixon, J.S.; Liu, W.K.
Arch. Biochem. Biophys. 133, 70-91, 1969
A;Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
A;Reference number: A90048; MUID:69289202; PMID:5810834
A;Contents: annotation
R;Li, C.H.; Dixon, J.S.
Arch. Biochem. Biophys. 146, 233-236, 1971
A;Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: revision.
A;Reference number: A90051; MUID:72143935; PMID:5144027
A;Accession: A90051
A;Molecule type: protein
A;Residues: 27-94;96-217 <LIC>
R;Niall, H.D.
Nature New Biol. 230, 90-91, 1971
A;Title: Revised primary structure for human growth hormone.
A;Reference number: A93397; MUID:71139765; PMID:5279046
A;Accession: A93397
A;Molecule type: protein
A;Residues: 27-51 <NIA>
R;Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
A;Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution from a primordial peptide by gene reduplication.
A;Reference number: A93778; MUID:71153968; PMID:5279528

A;Accession: A93778
A;Molecule type: protein
A;Residues: 119-120;157-159 <NI2>
R;Niall, H.D.
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K., ed., pp.13-20, Alpha Omega Alpha Press, Cardiff, Wales, 1972
A;Title: The chemistry of the human lactogenic hormones.
A;Reference number: A94427
A;Contents: annotation; somatotropin revision
R;Bewley, T.A.; Dixon, J.S.; Li, C.H.
Int. J. Pept. Protein Res. 4, 281-287, 1972
A;Title: Sequence comparison of human pituitary growth hormone, human chorionic somatomammotropin, and ovine pituitary growth and lactogenic hormones.
A;Reference number: A91764; MUID:73092028; PMID:4675454
A;Accession: A91764
A;Molecule type: protein
A;Residues: 27-217 <BEW>
R;Lewis, U.J.; Bonewald, L.F.; Lewis, L.J.
Biochem. Biophys. Res. Commun. 92, 511-516, 1980
A;Title: The 20,000-dalton variant of human growth hormone: location of the amino acid deletions.
A;Reference number: A90217; MUID:80130196; PMID:7356479
A;Contents: somatotropin, 20K short variant
A;Accession: A90217
A;Molecule type: protein
A;Residues: 46-57;73-80 <LEW>
R;Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.; Cary, P.D.; Crane-Robinson, C.
J. Biol. Chem. 256, 2395-2401, 1981
A;Title: The 20,000 molecular weight variant of human growth hormone. Preparation and some physical and chemical properties.
A;Reference number: A92311; MUID:81117361; PMID:7462247
A;Contents: somatotropin, 20K short variant
A;Accession: A92311
A;Molecule type: protein
A;Residues: 27-57;73-79 <CHA>
R;Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
J. Protein Chem. 2, 425-436, 1983
A;Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
A;Reference number: A61466
A;Accession: A61466
A;Molecule type: protein
A;Residues: 27-69 <SIN>
A;Note: growth hormone 5K peptide has insulin potentiating activity; its physiological production is uncertain
R;Robson, V.M.J.; Rae, I.D.; NG, F.
Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
A;Title: Identification of the aspartimide structure in a previously-reported peptide.
A;Reference number: S09685; MUID:90334745; PMID:2378679
A;Accession: S09685
A;Molecule type: protein
A;Residues: 27-34,'L',36-47 <ROB>
R;de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
Science 255, 306-312, 1992
A;Title: Human growth hormone and extracellular domain of its receptor: crystal structure of the complex.

A;Reference number: A41728; MUID:92196577; PMID:1549776
A;Contents: annotation; X-ray crystallography, 2.8 angstroms
A;Note: the structure of the complex with growth hormone receptor is described
R;Gray, G.L.; Baldridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
Gene 39, 247-254, 1985
A;Title: Periplasmic production of correctly processed human growth hormone in Escherichia coli: natural and bacterial signal sequences are interchangeable.
A;Reference number: I41126; MUID:86137393; PMID:3912261
A;Accession: I84549
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-26 <RES>
A;Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159
C;Comment: The gene for this hormone is transcribed only in somatotrophic cells of the anterior pituitary.
C;Comment: About 90% of somatotropin is the 22K long form.
C;Genetics:
A;Gene: GDB:GH1
A;Cross-references: GDB:119982; OMIM:139250
A;Map position: 17q23.1-17q23.3
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; hormone; pituitary
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-217/Product: somatotropin 1, long form #status experimental <SOL>
F;27-69/Product: growth hormone 5K peptide #status experimental <5KP>
F;27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
F;79-191,208-215/Disulfide bonds: #status experimental

Query Match 98.1%; Score 255; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 1.9e-24;
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74
```

RESULT 2
I67410
somatotropin - rhesus macaque
N;Alternate names: growth hormone
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I67410; A05094
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67410
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g293115
R;Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.

Arch. Biochem. Biophys. 245, 287-291, 1986
A;Title: The primary structure of monkey pituitary growth hormone.
A;Reference number: A05094; MUID:86129460; PMID:3080959
A;Accession: A05094
A;Molecule type: protein
A;Residues: 27-99,'Q',101-178,'D',180-217 <LIC>
A;Note: the monkey species is not identified in the reference
R;Raben, M.S.
Science 125, 883-884, 1957
A;Title: Preparation of growth hormone from pituitaries of man and monkey.
A;Reference number: A44774
A;Contents: annotation; identification of source organism
C;Superfamily: prolactin

Query Match 98.1%; Score 255; DB 2; Length 217;
Best Local Similarity 100.0%; Pred. No. 1.9e-24;
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74
```

RESULT 3
STHUV
somatotropin 2 precursor - human
N;Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin
N;Contains: somatotropin 2, long splice form; somatotropin 2, short splice form
C;Species: Homo sapiens (man)
C;Date: 17-Dec-1982 #sequence_revision 10-Feb-1995 #text_change 21-Jul-2000
C;Accession: D32435; B28072; A01511; I52104; A60711
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: D32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52552.1; PID:g183152
R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A;Title: Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.
A;Reference number: A92725; MUID:88243769; PMID:3379057
A;Accession: B28072
A;Molecule type: mRNA
A;Residues: 1-217 <COO>
R;Seeburg, P.H.
DNA 1, 239-249, 1982
A;Title: The human growth hormone gene family: nucleotide sequences show recent divergence and predict a new polypeptide hormone.
A;Reference number: A01511; MUID:83182010; PMID:7169009
A;Accession: A01511
A;Molecule type: DNA

A;Residues: 1-34,'P',36-217 <SEE>
R;Igout, A.; Scippo, M.L.; Frankenne, F.; Hennen, G.
Arch. Int. Physiol. Biochim. 96, 63-67, 1988
A;Title: Cloning and nucleotide sequence of placental hGH-V cDNA.
A;Reference number: I52104; MUID:89024984; PMID:2460050
A;Accession: I52104
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <IGO>
A;Cross-references: GB:M38451; NID:g183179; PIDN:AAA35891.1; PID:g183180
R;Frankenne, F.; Scippo, M.L.; Van Beeumen, J.; Igout, A.; Hennen, G.
J. Clin. Endocrinol. Metab. 71, 15-18, 1990
A;Title: Identification of placental human growth hormone as the growth hormone-V gene expression product.
A;Reference number: A60711; MUID:90317018; PMID:2196278
A;Accession: A60711
A;Molecule type: protein
A;Residues: 27-44;46-57 <FRA>
A;Experimental source: tissue placenta
A;Note: partial glycosylation was demonstrated by lectin binding
C;Comment: This gene is expressed by the placenta.
C;Genetics:
A;Gene: GDB:GH2
A;Cross-references: GDB:119983; OMIM:139240
A;Map position: 17q22-17q24
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; glycoprotein; hormone; placenta
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-217/Product: somatotropin 2, long splice form #status predicted <SOL>
F;27-57,73-217/Product: somatotropin 2, short splice form #status predicted <SOS>
F;79-191,208-215/Disulfide bonds: #status predicted
F;166/Binding site: carbohydrate (Asn) (covalent) #status predicted

  Query Match 87.7%; Score 228; DB 1; Length 217;
  Best Local Similarity 91.7%; Pred. No. 4.6e-21;
  Matches 44; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
      ||||||||||||||||| ||:|||:|||||||||| ||||||||||
Db 27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNP 74

RESULT 4
STHUV2
somatotropin 2 precursor, splice form 2 - human
N;Alternate names: growth hormone variant-2; placental somatotropin form 2
C;Species: Homo sapiens (man)
C;Date: 30-Sep-1989 #sequence_revision 10-Feb-1995 #text_change 02-Sep-1997
C;Accession: A28072
R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A;Title: Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.
A;Reference number: A92725; MUID:88243769; PMID:3379057
A;Accession: A28072

A;Molecule type: mRNA
A;Residues: 1-256 <COO>
A;Note: an alternative splice junction for intron 4 is used
C;Genetics:
A;Gene: GDB:GH2
A;Cross-references: GDB:119983; OMIM:139240
A;Map position: 17q22-17q24
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; hormone; placenta
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

  Query Match 87.7%; Score 228; DB 1; Length 256;
  Best Local Similarity 91.7%; Pred. No. 5.5e-21;
  Matches 44; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
      |||||||||||||||| ||:|||:|||||||||| ||||||||||
Db 27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNP 74

RESULT 5
I67408
chorionic somatomammotropin-2 - rhesus macaque (fragment)
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I67408
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related
complementary deoxyribonucleic acids differentially expressed during pregnancy
in the rhesus monkey placenta.
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67408
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-212 <RES>
A;Cross-references: GB:L16553; NID:g293110; PIDN:AAA18840.1; PID:g293111
C;Superfamily: prolactin

  Query Match 81.9%; Score 213; DB 2; Length 212;
  Best Local Similarity 78.7%; Pred. No. 3.3e-19;
  Matches 37; Conservative 9; Mismatches 1; Indels 0; Gaps 0;

Qy 3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
      |::|||||||:||::|||||||||||||||||||||||:|:| ::||
Db 23 PSVPLSRLFDHAMIQAHRLHQLAFDTYQEFEEAYIPKEKKHSLMENP 69

RESULT 6
I53267
chorionic somatomammotropin-1 - rhesus macaque
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I53267
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I53267
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:L16552; NID:g293108; PIDN:AAA18839.1; PID:g293109
C;Superfamily: prolactin

  Query Match 81.9%; Score 213; DB 2; Length 217;
  Best Local Similarity 78.7%; Pred. No. 3.4e-19;
  Matches 37; Conservative 9; Mismatches 1; Indels 0; Gaps 0;

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Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |::|||||||:||::|||||||||||||||||||||||:|:| ::||
Db         28 PSVPLSRLFDHAMIQAHRLHQLAFDTYQEFEEAYIPKEKKHSLMENP 74
```

RESULT 7
I67411
somatotropin - rhesus macaque
N;Alternate names: growth hormone
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I67411
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67411
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g293117
C;Superfamily: prolactin

  Query Match 78.8%; Score 205; DB 2; Length 217;
  Best Local Similarity 79.2%; Pred. No. 3.4e-18;
  Matches 38; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||| ||: |: ||| ||:|||||| :|||||||||||||||:||
Db         27 FPTIPLSWLFNTAVFRAHHLHKLAFDTYPKFEEAYIPKEQKYSFLRNP 74
```

RESULT 8
I67409
chorionic somatomammotropin-3 - rhesus macaque
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I67409
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67409
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:L16554; NID:g293112; PIDN:AAA18841.1; PID:g293113
C;Superfamily: prolactin

  Query Match 77.3%; Score 201; DB 2; Length 217;
  Best Local Similarity 74.5%; Pred. No. 1.1e-17;
  Matches 35; Conservative 8; Mismatches 4; Indels 0; Gaps 0;

Qy 3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
  |::|||||||| |::|||||||||||||||||: |||||:|:| : ||
Db 28 PSVPLSRLFDNIMMQAHRLHQLAFDTYQEFEKTYIPKEKKHSLMGNP 74

RESULT 9
A26449
choriomammotropin precursor (allele hCS-3) - human
C;Species: Homo sapiens (man)
C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 28-Jul-1995
C;Accession: A26449
R;Hirt, H.; Kimelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.; Barta, A.
DNA 6, 59-70, 1987
A;Title: The human growth hormone gene locus: structure, evolution, and allelic variations.
A;Reference number: A26449; MUID:87161235; PMID:3030680
A;Accession: A26449
A;Molecule type: DNA
A;Residues: 1-215 <HIR>
C;Superfamily: prolactin
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-215/Product: choriomammotropin, hCS-3 allele #status predicted <MAT>

  Query Match 75.8%; Score 197; DB 2; Length 215;
  Best Local Similarity 80.0%; Pred. No. 3.4e-17;
  Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
  |:|||||||:|||:||| |||| |||||||| ||||:|||||| :
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHD 73

RESULT 10
LCHUC
choriomammotropin A precursor [validated] - human
N;Alternate names: chorionic somatomammotropin 1; placental lactogen
C;Species: Homo sapiens (man)
C;Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 08-Dec-2000
C;Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229; I59658; A01512

R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: C32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52551.1; PID:g183151
R;Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallewell, R.A.; Page, G.S.; Smith, S.; Tischer, E.
in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Joseph, D.R., and Schultz, J., eds., pp.155-179, Academic Press, New York, 1980
A;Reference number: A94422
A;Accession: A94422
A;Molecule type: mRNA
A;Residues: 1-217 <GOO>
R;Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashima, K.
Biochem. Int. 16, 287-292, 1988
A;Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription was initiated at the 5' region of the TATA box.
A;Reference number: I52342; MUID:88209096; PMID:2835050
A;Accession: I52342
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-3 <TAN>
A;Cross-references: GB:M35419; NID:g506822
R;Sherwood, L.M.; Burstein, Y.; Schechter, I.
Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979
A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human placental lactogen.
A;Reference number: A93833; MUID:80034970; PMID:291043
A;Accession: A93833
A;Molecule type: protein
A;Residues: 1,3-26 <SHE>
A;Experimental source: placenta
R;Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.
Nature 270, 494-499, 1977
A;Title: Construction and analysis of recombinant DNA for human chorionic somatomammotropin.
A;Reference number: A93192; MUID:78071761; PMID:593368
A;Accession: A93192
A;Molecule type: DNA
A;Residues: 50-217 <SHI>
A;Experimental source: placenta
R;Li, C.H.; Dixon, J.S.; Chung, D.
Arch. Biochem. Biophys. 155, 95-110, 1973
A;Title: Amino acid sequence of human chorionic somatomammotropin.
A;Reference number: A90054; MUID:73201971; PMID:4712450
A;Accession: A90054
A;Molecule type: protein
A;Residues: 27-217 <LIC>
A;Experimental source: placenta
R;Niall, H.D.

in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K., ed., pp.13-20, Alpha Omega Alpha Press, Cardiff, Wales, 1972
A;Title: The chemistry of the human lactogenic hormones.
A;Reference number: A94427
A;Accession: A94427
A;Molecule type: protein
A;Residues: 27-217 <NIA>
A;Experimental source: placenta
R;Nic A Bhaird, N.; Tipton, K.F.
Biochem. Soc. Trans. 19, 20S, 1991
A;Title: Catechol-O-methyltransferase from human placenta: purification and some properties.
A;Reference number: A61283; MUID:91244006; PMID:2037148
A;Accession: A61283
A;Molecule type: protein
A;Residues: 27-46 <NIC>
A;Note: choriomammotropin apparently copurified with placental catechol-O-methyltransferase
R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 233, 59-61, 1971
A;Title: Amino-acid sequence of human placental lactogen.
A;Reference number: A93401; MUID:72016313; PMID:5286363
A;Contents: annotation
R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 235, 64, 1972
A;Reference number: A93405
A;Contents: annotation
R;Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.
J. Biol. Chem. 254, 3782-3787, 1979
A;Title: Identification of the interchain disulfide bonds of dimeric human placental lactogen.
A;Reference number: A92251; MUID:79173081; PMID:438159
A;Contents: annotation; dimeric disulfide bonds
R;Selby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.
J. Biol. Chem. 259, 13131-13138, 1984
A;Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two functional promoter elements.
A;Reference number: I55229; MUID:85030426; PMID:6208192
A;Accession: I55229
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:K02401; NID:g181120; PIDN:AAA52115.1; PID:g181121
R;Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.
Trans. Assoc. Am. Physicians 90, 109-116, 1977
A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
A;Reference number: I59658; MUID:78160787; PMID:611657
A;Accession: I59658
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 160-217 <RE2>
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C;Genetics:
A;Gene: GDB:CSH1
A;Cross-references: GDB:119084; OMIM:150200
A;Map position: 17q22-17q24
A;Introns: 4/1; 57/3; 97/3; 152/3

C;Superfamily: prolactin
C;Keywords: hormone; placenta
F;1-26/Domain: signal sequence #status experimental <SIG>
F;27-217/Product: choriomammotropin A #status experimental <MAT>
F;79-191/Disulfide bonds: #status experimental
F;208-215/Disulfide bonds: (in monomeric form) #status experimental
F;208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
F;215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

  Query Match 75.8%; Score 197; DB 1; Length 217;
  Best Local Similarity 80.0%; Pred. No. 3.4e-17;
  Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
  |:|||||||:|||:||| |||| |||||||| ||||:|||||| :
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHD 73

RESULT 11
E32435
choriomammotropin B precursor - human
N;Alternate names: chorionic somatomammotropin 2
C;Species: Homo sapiens (man)
C;Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
C;Accession: E32435
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.;
Seeburg, P.H.
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and
evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: E32435
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g183153
C;Genetics:
A;Gene: GDB:CSH2
A;Cross-references: GDB:119813; OMIM:118820
A;Map position: 17q22-17q24
C;Superfamily: prolactin

  Query Match 75.8%; Score 197; DB 2; Length 217;
  Best Local Similarity 80.0%; Pred. No. 3.4e-17;
  Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
  |:|||||||:|||:||| |||| |||||||| ||||:|||||| :
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHD 73

RESULT 12
STMS
somatotropin precursor - mouse
N;Alternate names: growth hormone
C;Species: Mus musculus (house mouse)
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 28-May-1999

C;Accession: B23911
R;Linzer, D.I.H.; Talamantes, F.
J. Biol. Chem. 260, 9574-9579, 1985
A;Title: Nucleotide sequence of mouse prolactin and growth hormone mRNAs and expression of these mRNAs during pregnancy.
A;Reference number: A92548; MUID:85261358; PMID:2991252
A;Accession: B23911
A;Molecule type: mRNA
A;Residues: 1-216 <LIN>
A;Cross-references: GB:X02891; GB:K03232; NID:g51067; PIDN:CAA26650.1; PID:g51068
C;Superfamily: prolactin
C;Keywords: anterior pituitary; growth factor; hormone
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-216/Product: somatotropin #status predicted <STN>
F;78-189,206-214/Disulfide bonds: #status predicted

Query Match 62.1%; Score 161.5; DB 1; Length 216;
Best Local Similarity 68.1%; Pred. No. 9.3e-13;
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

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Db         27 FPAMPLSSLFSNAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72
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RESULT 13
PN0140
somatotropin - sei whale
N;Alternate names: growth hormone
C;Species: Balaenoptera borealis (sei whale)
C;Date: 07-May-1993 #sequence_revision 07-May-1993 #text_change 07-May-1999
C;Accession: PN0140
R;Yudaev, N.A.; Pankov, Y.A.; Bulatov, A.A.; Osipova, T.A.
Biokhimiia 47, 1059-1069, 1982
A;Title: Amino acid sequence of seiwhale somatotropin.
A;Reference number: PN0140; MUID:83000569; PMID:7115813
A;Accession: PN0140
A;Molecule type: protein
A;Residues: 1-190 <YUD>
A;Note: article in Russian with English abstract
C;Superfamily: prolactin
C;Keywords: growth factor; hormone
F;52-163,180-188/Disulfide bonds: #status predicted

Query Match 61.7%; Score 160.5; DB 2; Length 190;
Best Local Similarity 68.1%; Pred. No. 1.1e-12;
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

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Db          1 FPAMPLSSLFANAVLRAQHLHELAADTYKEFERAYIPEGQRY-FLQN 46
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RESULT 14
STHO
somatotropin - horse

N;Alternate names: growth hormone
C;Species: Equus caballus (domestic horse)
C;Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 23-Aug-1996
C;Accession: A91772; A91395; A91383; A90240; A01514
R;Zakin, M.M.; Poskus, E.; Langton, A.A.; Ferrara, P.; Santome, J.A.; Dellacha, J.M.; Paladini, A.C.
Int. J. Pept. Protein Res. 8, 435-444, 1976
A;Title: Primary structure of equine growth hormone.
A;Reference number: A91772; MUID:77005410; PMID:965151
A;Accession: A91772
A;Molecule type: protein
A;Residues: 1-190 <ZAK>
R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
FEBS Lett. 34, 353-355, 1973
A;Title: The amino acid sequence of equine growth hormone.
A;Reference number: A91395; MUID:74020362; PMID:4747849
A;Accession: A91395
A;Molecule type: protein
A;Residues: 1-190 <ZA2>
R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
FEBS Lett. 25, 77-82, 1972
A;Title: Amino acid sequences around the cystine residues in equine growth hormone.
A;Reference number: A91383
A;Accession: A91383
A;Molecule type: protein
A;Residues: 42-69;157-190 <ZA3>
R;Oliver, L.; Hartree, A.S.
Biochem. J. 109, 19-24, 1968
A;Title: Amino acid sequences around the cystine residues in horse growth hormone.
A;Reference number: A90240; MUID:68368390; PMID:4876100
A;Accession: A90240
A;Molecule type: protein
A;Residues: 176-190 <OLI>
C;Superfamily: prolactin
C;Keywords: hormone; pituitary
F;52-163,180-188/Disulfide bonds: #status experimental

  Query Match 61.3%; Score 159.5; DB 1; Length 190;
  Best Local Similarity 68.1%; Pred. No. 1.4e-12;
  Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

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Db          1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 46
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RESULT 15
JK0219
somatotropin - African elephant
N;Alternate names: growth hormone
C;Species: Loxodonta africana (African elephant)
C;Date: 03-Aug-1992 #sequence_revision 03-Aug-1992 #text_change 15-Oct-1996
C;Accession: JK0219
R;Hulmes, J.D.; Miedel, M.C.; Li, C.H.; Pan, Y.C.E.
Int. J. Pept. Protein Res. 33, 368-372, 1989

A;Title: Primary structure of elephant growth hormone.
A;Reference number: JK0219
A;Accession: JK0219
A;Molecule type: protein
A;Residues: 1-190 <HUL>
A;Experimental source: pituitary gland
C;Superfamily: prolactin
F;1-190/Product: somatotropin #status experimental <MAT>

Query Match 61.3%; Score 159.5; DB 2; Length 190;
Best Local Similarity 68.1%; Pred. No. 1.4e-12;
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

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Db          1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 46
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Job time : 5.65174 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:37:41 ; Search time 20.3862 Seconds
(without alignments)
751.267 Million cell updates/sec

Title: US-09-423-100-1
Perfect score: 260
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Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1285345 seqs, 312560633 residues

Total number of hits satisfying chosen parameters: 1285345

Minimum DB seq length: 0
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description

1	260	100.0	49	13	US-10-054-873-1	Sequence 1, Appli
2	260	100.0	92	13	US-10-054-873-2	Sequence 2, Appli
3	260	100.0	107	13	US-10-054-873-6	Sequence 6, Appli
4	260	100.0	134	10	US-09-819-094-24	Sequence 24, Appl
5	260	100.0	134	16	US-10-714-067-24	Sequence 24, Appl
6	260	100.0	150	13	US-10-054-873-7	Sequence 7, Appli
7	260	100.0	188	12	US-10-621-693-18	Sequence 18, Appl
8	260	100.0	192	10	US-09-819-094-23	Sequence 23, Appl
9	260	100.0	192	12	US-10-621-693-8	Sequence 8, Appli
10	260	100.0	192	12	US-10-621-693-78	Sequence 78, Appl
11	260	100.0	192	12	US-10-621-693-86	Sequence 86, Appl
12	260	100.0	192	16	US-10-714-067-23	Sequence 23, Appl
13	260	100.0	193	12	US-10-621-693-42	Sequence 42, Appl
14	260	100.0	206	12	US-10-621-693-72	Sequence 72, Appl
15	260	100.0	391	12	US-10-621-693-51	Sequence 51, Appl
16	260	100.0	574	12	US-10-621-693-32	Sequence 32, Appl
17	260	100.0	576	12	US-10-621-693-39	Sequence 39, Appl
18	260	100.0	589	12	US-10-621-693-53	Sequence 53, Appl
19	260	100.0	786	12	US-10-621-693-55	Sequence 55, Appl
20	260	100.0	810	12	US-10-621-693-76	Sequence 76, Appl
21	255	98.1	191	10	US-09-984-010-23	Sequence 23, Appl
22	255	98.1	191	12	US-10-646-798-2	Sequence 2, Appli
23	255	98.1	191	12	US-10-621-693-2	Sequence 2, Appli
24	255	98.1	191	12	US-10-621-693-21	Sequence 21, Appl
25	255	98.1	191	12	US-10-621-693-80	Sequence 80, Appl
26	255	98.1	191	12	US-10-621-693-82	Sequence 82, Appl
27	255	98.1	191	12	US-10-621-693-84	Sequence 84, Appl
28	255	98.1	191	14	US-10-153-207-1	Sequence 1, Appli
29	255	98.1	191	14	US-10-400-377-1	Sequence 1, Appli
30	255	98.1	191	14	US-10-400-708-1	Sequence 1, Appli
31	255	98.1	191	14	US-10-298-148-1	Sequence 1, Appli
32	255	98.1	191	16	US-10-718-340-1	Sequence 1, Appli
33	255	98.1	191	16	US-10-658-834A-850	Sequence 850, App
34	255	98.1	191	16	US-10-658-834A-851	Sequence 851, App
35	255	98.1	191	16	US-10-658-834A-852	Sequence 852, App
36	255	98.1	191	16	US-10-658-834A-853	Sequence 853, App
37	255	98.1	191	16	US-10-658-834A-854	Sequence 854, App
38	255	98.1	191	16	US-10-658-834A-855	Sequence 855, App
39	255	98.1	191	16	US-10-658-834A-856	Sequence 856, App
40	255	98.1	191	16	US-10-658-834A-857	Sequence 857, App
41	255	98.1	191	16	US-10-658-834A-858	Sequence 858, App
42	255	98.1	191	16	US-10-658-834A-859	Sequence 859, App
43	255	98.1	191	16	US-10-658-834A-860	Sequence 860, App
44	255	98.1	191	16	US-10-658-834A-861	Sequence 861, App
45	255	98.1	191	16	US-10-658-834A-862	Sequence 862, App

ALIGNMENTS

RESULT 1
US-10-054-873-1
; Sequence 1, Application US/10054873
; Publication No. US20020164712A1
; GENERAL INFORMATION:
; APPLICANT: Gan, Zhong Ru

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;         TITLE OF INVENTION: Chimeric Protein Containing an
;                             Intramolecular Chaperone-Like Sequence
;         NUMBER OF SEQUENCES: 7
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Townsend and Townsend and Crew LLP
;              STREET: Two Embarcadero Center, Eighth Floor
;              CITY: San Francisco
;              STATE: California
;              COUNTRY: USA
;              ZIP: 94111-3834
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: Floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: PatentIn Release #1.0, Version #1.30
;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/10/054,873
;              FILING DATE: 22-Jan-2002
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: WO PCT/CN98/00052
;              FILING DATE: 31-MAR-1998
;              APPLICATION NUMBER: US 09/423,100
;              FILING DATE: 11-DEC-2000
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Mycroft, Frank J
;              REGISTRATION NUMBER: 46,946
;              REFERENCE/DOCKET NUMBER: 020167-000130US
;    INFORMATION FOR SEQ ID NO: 1:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 49 amino acids
;              TYPE: amino acid
;              STRANDEDNESS: <Unknown>
;              TOPOLOGY: linear
;         MOLECULE TYPE: protein
;         SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-10-054-873-1

  Query Match             100.0%;  Score 260;  DB 13;  Length 49;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 2
US-10-054-873-2
; Sequence 2, Application US/10054873
; Publication No. US20020164712A1
;    GENERAL INFORMATION:
;         APPLICANT: Gan, Zhong Ru
;         TITLE OF INVENTION: Chimeric Protein Containing an
;                             Intramolecular Chaperone-Like Sequence
;         NUMBER OF SEQUENCES: 7
;         CORRESPONDENCE ADDRESS:
```

```
;             ADDRESSEE: Townsend and Townsend and Crew LLP
;             STREET: Two Embarcadero Center, Eighth Floor
;             CITY: San Francisco
;             STATE: California
;             COUNTRY: USA
;             ZIP: 94111-3834
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.30
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/10/054,873
;             FILING DATE: 22-Jan-2002
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: WO PCT/CN98/00052
;             FILING DATE: 31-MAR-1998
;             APPLICATION NUMBER: US 09/423,100
;             FILING DATE: 11-DEC-2000
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Mycroft, Frank J
;             REGISTRATION NUMBER: 46,946
;             REFERENCE/DOCKET NUMBER: 020167-000130US
;   INFORMATION FOR SEQ ID NO: 2:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 92 amino acids
;             TYPE: amino acid
;             STRANDEDNESS: <Unknown>
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-10-054-873-2

  Query Match             100.0%;  Score 260;  DB 13;  Length 92;
  Best Local Similarity   100.0%;  Pred. No. 2.6e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 3
US-10-054-873-6
; Sequence 6, Application US/10054873
; Publication No. US20020164712A1
;   GENERAL INFORMATION:
;        APPLICANT: Gan, Zhong Ru
;        TITLE OF INVENTION: Chimeric Protein Containing an
;                            Intramolecular Chaperone-Like Sequence
;        NUMBER OF SEQUENCES: 7
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Townsend and Townsend and Crew LLP
;             STREET: Two Embarcadero Center, Eighth Floor
;             CITY: San Francisco
;             STATE: California
```

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;              COUNTRY: USA
;              ZIP: 94111-3834
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: Floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: PatentIn Release #1.0, Version #1.30
;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/10/054,873
;              FILING DATE: 22-Jan-2002
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: WO PCT/CN98/00052
;              FILING DATE: 31-MAR-1998
;              APPLICATION NUMBER: US 09/423,100
;              FILING DATE: 11-DEC-2000
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Mycroft, Frank J
;              REGISTRATION NUMBER: 46,946
;              REFERENCE/DOCKET NUMBER: 020167-000130US
;    INFORMATION FOR SEQ ID NO: 6:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 107 amino acids
;              TYPE: amino acid
;              STRANDEDNESS: <Unknown>
;              TOPOLOGY: linear
;         MOLECULE TYPE: protein
;         SEQUENCE DESCRIPTION: SEQ ID NO: 6:
US-10-054-873-6

  Query Match             100.0%;  Score 260;  DB 13;  Length 107;
  Best Local Similarity   100.0%;  Pred. No. 3.1e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 4
US-09-819-094-24
; Sequence 24, Application US/09819094
; Publication No. US20030186382A1
; GENERAL INFORMATION:
;  APPLICANT: Weiner, Richard I.
;  APPLICANT:  Martial, Joseph A.
;  APPLICANT:  Struman, Ingrid
;  APPLICANT:  Taylor, Robert
;  APPLICANT:  Bentzien, Frauke
;  TITLE OF INVENTION: No. US20030186382A1el Antiangiogenic Peptide Agents and
Their
;  TITLE OF INVENTION:  Therapeutic and Diagnostic Use
;  FILE REFERENCE: UCSF-018/02US
;  CURRENT APPLICATION NUMBER: US/09/819,094
;  CURRENT FILING DATE:  2001-03-27
;  PRIOR APPLICATION NUMBER: 09/076,675
;  PRIOR FILING DATE: 1998-05-12
```

```
;  PRIOR APPLICATION NUMBER: 60/046,394
;  PRIOR FILING DATE: 1997-05-12
;  NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 24
;   LENGTH: 134
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-819-094-24

  Query Match             100.0%;  Score 260;  DB 10;  Length 134;
  Best Local Similarity   100.0%;  Pred. No. 4.1e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 5
US-10-714-067-24
; Sequence 24, Application US/10714067
; Publication No. US20040077054A1
; GENERAL INFORMATION:
;  APPLICANT: Weiner, Richard I.
;  APPLICANT:  Martial, Joseph A.
;  APPLICANT:  Struman, Ingrid
;  APPLICANT:  Taylor, Robert
;  APPLICANT:  Bentzien, Frauke
;  TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
;  TITLE OF INVENTION:  Therapeutic and Diagnostic Use
;  FILE REFERENCE: UCSF-018/02US
;  CURRENT APPLICATION NUMBER: US/10/714,067
;  CURRENT FILING DATE:  2003-11-14
;  PRIOR APPLICATION NUMBER: US/09/819,094
;  PRIOR FILING DATE: 2001-03-27
;  PRIOR APPLICATION NUMBER: 09/076,675
;  PRIOR FILING DATE: 1998-05-12
;  PRIOR APPLICATION NUMBER: 60/046,394
;  PRIOR FILING DATE: 1997-05-12
;  NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 24
;   LENGTH: 134
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-714-067-24

  Query Match             100.0%;  Score 260;  DB 16;  Length 134;
  Best Local Similarity   100.0%;  Pred. No. 4.1e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 6
US-10-054-873-7
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```
; Sequence 7, Application US/10054873
; Publication No. US20020164712A1
;   GENERAL INFORMATION:
;        APPLICANT: Gan, Zhong Ru
;        TITLE OF INVENTION: Chimeric Protein Containing an
;                            Intramolecular Chaperone-Like Sequence
;        NUMBER OF SEQUENCES: 7
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Townsend and Townsend and Crew LLP
;             STREET: Two Embarcadero Center, Eighth Floor
;             CITY: San Francisco
;             STATE: California
;             COUNTRY: USA
;             ZIP: 94111-3834
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.30
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/10/054,873
;             FILING DATE: 22-Jan-2002
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: WO PCT/CN98/00052
;             FILING DATE: 31-MAR-1998
;             APPLICATION NUMBER: US 09/423,100
;             FILING DATE: 11-DEC-2000
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Mycroft, Frank J
;             REGISTRATION NUMBER: 46,946
;             REFERENCE/DOCKET NUMBER: 020167-000130US
;   INFORMATION FOR SEQ ID NO: 7:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 150 amino acids
;             TYPE: amino acid
;             STRANDEDNESS: <Unknown>
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-10-054-873-7

  Query Match             100.0%;  Score 260;  DB 13;  Length 150;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 7
US-10-621-693-18
; Sequence 18, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
```

; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 18
; LENGTH: 188
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-18

Query Match 100.0%; Score 260; DB 12; Length 188;
Best Local Similarity 100.0%; Pred. No. 6.1e-27;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 8
US-09-819-094-23
; Sequence 23, Application US/09819094
; Publication No. US20030186382A1
; GENERAL INFORMATION:
; APPLICANT: Weiner, Richard I.
; APPLICANT: Martial, Joseph A.
; APPLICANT: Struman, Ingrid
; APPLICANT: Taylor, Robert
; APPLICANT: Bentzien, Frauke
; TITLE OF INVENTION: No. US20030186382A1el Antiangiogenic Peptide Agents and Their
; TITLE OF INVENTION: Therapeutic and Diagnostic Use
; FILE REFERENCE: UCSF-018/02US
; CURRENT APPLICATION NUMBER: US/09/819,094
; CURRENT FILING DATE: 2001-03-27
; PRIOR APPLICATION NUMBER: 09/076,675
; PRIOR FILING DATE: 1998-05-12
; PRIOR APPLICATION NUMBER: 60/046,394
; PRIOR FILING DATE: 1997-05-12
; NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 23
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-819-094-23

Query Match 100.0%; Score 260; DB 10; Length 192;
Best Local Similarity 100.0%; Pred. No. 6.2e-27;

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  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 9
US-10-621-693-8
; Sequence 8, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 8
;   LENGTH: 192
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
;   FEATURE:
;   NAME/KEY: mat_peptide
;   LOCATION: (1)..()
US-10-621-693-8

  Query Match             100.0%;  Score 260;  DB 12;  Length 192;
  Best Local Similarity   100.0%;  Pred. No. 6.2e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 10
US-10-621-693-78
; Sequence 78, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
```

```
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 78
;   LENGTH: 192
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
US-10-621-693-78

  Query Match             100.0%;  Score 260;  DB 12;  Length 192;
  Best Local Similarity   100.0%;  Pred. No. 6.2e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 11
US-10-621-693-86
; Sequence 86, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 86
;   LENGTH: 192
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (2)..(192)
;   OTHER INFORMATION: sequence is repeated N+2 times, where N is a positive
whole numbe
;   FEATURE:
;   NAME/KEY: mat_peptide
;   LOCATION: (1)..()
US-10-621-693-86

  Query Match             100.0%;  Score 260;  DB 12;  Length 192;
  Best Local Similarity   100.0%;  Pred. No. 6.2e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
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```
Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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RESULT 12
US-10-714-067-23
; Sequence 23, Application US/10714067
; Publication No. US20040077054A1
; GENERAL INFORMATION:
; APPLICANT: Weiner, Richard I.
; APPLICANT: Martial, Joseph A.
; APPLICANT: Struman, Ingrid
; APPLICANT: Taylor, Robert
; APPLICANT: Bentzien, Frauke
; TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
; TITLE OF INVENTION: Therapeutic and Diagnostic Use
; FILE REFERENCE: UCSF-018/02US
; CURRENT APPLICATION NUMBER: US/10/714,067
; CURRENT FILING DATE: 2003-11-14
; PRIOR APPLICATION NUMBER: US/09/819,094
; PRIOR FILING DATE: 2001-03-27
; PRIOR APPLICATION NUMBER: 09/076,675
; PRIOR FILING DATE: 1998-05-12
; PRIOR APPLICATION NUMBER: 60/046,394
; PRIOR FILING DATE: 1997-05-12
; NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 23
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-714-067-23

Query Match 100.0%; Score 260; DB 16; Length 192;
Best Local Similarity 100.0%; Pred. No. 6.2e-27;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
```

RESULT 13
US-10-621-693-42
; Sequence 42, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466

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;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 42
;   LENGTH: 193
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
US-10-621-693-42

  Query Match             100.0%;  Score 260;  DB 12;  Length 193;
  Best Local Similarity   100.0%;  Pred. No. 6.3e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 14
US-10-621-693-72
; Sequence 72, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 72
;   LENGTH: 206
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
US-10-621-693-72

  Query Match             100.0%;  Score 260;  DB 12;  Length 206;
  Best Local Similarity   100.0%;  Pred. No. 6.8e-27;
  Matches   49;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49


RESULT 15
US-10-621-693-51
; Sequence 51, Application US/10621693
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; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 51
; LENGTH: 391
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
; FEATURE:
; NAME/KEY: mat_peptide
; LOCATION: (1)..()
US-10-621-693-51

Query Match 100.0%; Score 260; DB 12; Length 391;
Best Local Similarity 100.0%; Pred. No. 1.4e-26;
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
```

Search completed: July 15, 2004, 17:05:06
Job time : 27.3862 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:29:50 ; Search time 16.7295 Seconds
(without alignments)
924.141 Million cell updates/sec

Title: US-09-423-100-1
Perfect score: 260
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1017041 seqs, 315518202 residues

Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_25:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description

1	249	95.8	217	6	Q8WNE0	Q8wne0 ateles geof
2	228	87.7	245	4	O14644	O14644 homo sapien
3	215	82.7	184	6	Q866T9	Q866t9 pan troglod
4	213	81.9	212	6	Q07368	Q07368 macaca mula
5	213	81.9	217	6	Q07367	Q07367 macaca mula
6	205	78.8	217	6	Q866U1	Q866u1 pan troglod
7	201	77.3	217	6	Q07369	Q07369 macaca mula
8	201	77.3	217	6	Q866T8	Q866t8 pan troglod
9	197	75.8	217	4	Q14407	Q14407 homo sapien
10	195	75.0	217	6	Q8WND9	Q8wnd9 ateles geof
11	186	71.5	217	6	Q866U0	Q866u0 pan troglod
12	170	65.4	217	6	Q8MI74	Q8mi74 callithrix
13	160.5	61.7	216	11	O70615	O70615 spalax leuc
14	159.5	61.3	52	6	Q9TV91	Q9tv91 equus cabal
15	159.5	61.3	216	6	Q8MI73	Q8mi73 delphinus d
16	159.5	61.3	216	6	Q8HYE5	Q8hye5 ailuropoda
17	159.5	61.3	216	6	Q7YQB8	Q7yqb8 hippopotamu
18	155.5	59.8	216	6	Q7YRR6	Q7yrr6 camelus dro
19	155.5	59.8	216	11	Q9R2C3	Q9r2c3 mus musculu
20	154	59.2	216	11	Q9JKM4	Q9jkm4 cavia porce
21	152	58.5	178	6	Q95MJ5	Q95mj5 tarsius ban
22	149.5	57.5	204	6	Q95205	Q95205 ovis aries
23	147	56.5	202	4	O14643	O14643 homo sapien
24	146	56.2	178	6	Q95MJ6	Q95mj6 tarsius syr
25	144	55.4	190	11	Q9JKG0	Q9jkg0 cavia porce
26	143.5	55.2	192	6	Q9TU21	Q9tu21 capra hircu
27	142.5	54.8	192	6	Q9TQW9	Q9tqw9 bos indicus
28	142.5	54.8	217	6	Q7YQD2	Q7yqd2 giraffa cam
29	141	54.2	217	6	Q8MI75	Q8mi75 callithrix
30	140	53.8	216	13	Q804M1	Q804m1 anser anser
31	139.5	53.7	217	6	Q864S7	Q864s7 bos mutus g
32	138.5	53.3	217	6	Q28957	Q28957 sus scrofa
33	138.5	53.3	217	6	Q9BEC0	Q9bec0 tragulus ja
34	138.5	53.3	217	6	Q9BEB9	Q9beb9 tragulus ja
35	137	52.7	40	6	Q9TRI9	Q9tri9 macropus ru
36	132	50.8	218	13	Q9PU72	Q9pu72 cynops pyrr
37	130	50.0	215	13	Q7ZU47	Q7zu47 rana catesb
38	128	49.2	195	13	Q91386	Q91386 amia calva
39	123.5	47.5	143	6	Q95240	Q95240 canis famil
40	122	46.9	199	4	Q14406	Q14406 homo sapien
41	122	46.9	217	13	Q7T1C3	Q7t1c3 ambystoma b
42	119	45.8	63	13	Q8QG85	Q8qg85 anser anser
43	107	41.2	53	6	O19034	O19034 ovis aries
44	104	40.0	55	6	O46474	O46474 felis silve
45	101	38.8	167	4	P78451	P78451 homo sapien

ALIGNMENTS

RESULT 1
Q8WNE0
ID Q8WNE0 PRELIMINARY; PRT; 217 AA.
AC Q8WNE0;
DT 01-MAR-2002 (TrEMBLrel. 20, Created)
DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)

```
DE   Growth hormone.
GN   GH-N.
OS   Ateles geoffroyi (Black-handed spider monkey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.
OX   NCBI_TaxID=9509;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT   "Independent duplication of the growth hormone gene in three
RT   Anthropoidean lineages.";
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF374234; AAL72286.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24894 MW;  425829FF41EEAAE6 CRC64;

  Query Match             95.8%;  Score 249;  DB 6;  Length 217;
  Best Local Similarity   97.9%;  Pred. No. 1.7e-25;
  Matches   47;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||| ||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 2
O14644
ID   O14644      PRELIMINARY;      PRT;   245 AA.
AC   O14644;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Placental growth hormone isoform hGH-V3 precursor.
GN   HGH-V.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Term placenta;
RX   MEDLINE=98373737; PubMed=9709963;
RA   Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RA   Carlsson L.M.S., Carlsson B.;
RT   "Cloning of two novel growth hormone transcripts expressed in human
RT   placenta.";
RL   J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
DR   EMBL; AF006061; AAB71829.1; -.
DR   HSSP; P01241; 1A22.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
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DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
SQ   SEQUENCE   245 AA;  27101 MW;  14CC7F8CD75D91C8 CRC64;

  Query Match             87.7%;  Score 228;  DB 4;  Length 245;
  Best Local Similarity   91.7%;  Pred. No. 1.3e-22;
  Matches   44;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||  ||:|||:||||||||||| ||||||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNP 74


RESULT 3
Q866T9
ID   Q866T9      PRELIMINARY;      PRT;   184 AA.
AC   Q866T9;
DT   01-JUN-2003 (TrEMBLrel. 24, Created)
DT   01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Placental lactogen PL-C (Fragment).
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D.E., Barrera H.S.;
RT   "The GH-PL locus a hot-point between human and chimpanzee genomes.";
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY146627; AAN84507.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
FT   NON_TER     184    184
SQ   SEQUENCE   184 AA;  21145 MW;  68D1FF4AE59178DD CRC64;

  Query Match             82.7%;  Score 215;  DB 6;  Length 184;
  Best Local Similarity   85.1%;  Pred. No. 5.5e-21;
  Matches   40;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              ||||||||||:|||:||| |||| ||||||||||||:|||||| :
Db         27 FPTIPLSRLFDHAMLQAHRAHQLAIDTYQEFEEAYIPKDQKYSFLHD 73


RESULT 4
Q07368
ID   Q07368      PRELIMINARY;      PRT;   212 AA.
AC   Q07368;
```

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DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Somatotropin 2 precursor (Growth hormone 2) (Fragment).
OS   Macaca mulatta (Rhesus macaque).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC   Cercopithecinae; Macaca.
OX   NCBI_TaxID=9544;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Placenta;
RX   MEDLINE=94008724; PubMed=8404617;
RA   Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT   "Cloning of four growth hormone/chorionic somatomammotropin-related
RT   complementary deoxyribonucleic acids differentially expressed during
RT   pregnancy in the rhesus monkey placenta.";
RL   Endocrinology 133:1744-1752(1993).
DR   EMBL; L16553; AAA18840.1; -.
DR   PIR; I67408; I67408.
DR   HSSP; P01241; 1AXI.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
FT   NON_TER       1      1
SQ   SEQUENCE   212 AA;  24525 MW;  27BC91106256E6F5 CRC64;

  Query Match             81.9%;  Score 213;  DB 6;  Length 212;
  Best Local Similarity   78.7%;  Pred. No. 1.2e-20;
  Matches   37;  Conservative    9;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |::|||||||:||::||||||||||||||||||||||:|:| ::||
Db         23 PSVPLSRLFDHAMIQAHRLHQLAFDTYQEFEEAYIPKEKKHSLMENP 69


RESULT 5
Q07367
ID   Q07367      PRELIMINARY;      PRT;   217 AA.
AC   Q07367;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Chorionic somatomammotropin-1.
OS   Macaca mulatta (Rhesus macaque).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC   Cercopithecinae; Macaca.
OX   NCBI_TaxID=9544;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Midpregnancy placenta;
RX   MEDLINE=94008724; PubMed=8404617;
RA   Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
```

```
RT   "Cloning of four growth hormone/chorionic somatomammotropin-related
RT   complementary deoxyribonucleic acids differentially expressed during
RT   pregnancy in the rhesus monkey placenta.";
RL   Endocrinology 133:1744-1752(1993).
DR   EMBL; L16552; AAA18839.1; -.
DR   PIR; I53267; I53267.
DR   HSSP; P01241; 1AXI.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24942 MW;  FF5AA8915131F2BC CRC64;

  Query Match             81.9%;  Score 213;  DB 6;  Length 217;
  Best Local Similarity   78.7%;  Pred. No. 1.2e-20;
  Matches   37;  Conservative    9;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |::|||||||:||::||||||||||||||||||||||||:|:| ::||
Db         28 PSVPLSRLFDHAMIQAHRLHQLAFDTYQEFEEAYIPKEKKHSLMENP 74


RESULT 6
Q866U1
ID   Q866U1      PRELIMINARY;      PRT;   217 AA.
AC   Q866U1;
DT   01-JUN-2003 (TrEMBLrel. 24, Created)
DT   01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Placental lactogen PL-A.
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D.E., Barrera H.S.;
RT   "The GH-PL locus a hot-point between human and chimpanzee genomes.";
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY146625; AAN84505.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  25081 MW;  C74B6262D8A93060 CRC64;

  Query Match             78.8%;  Score 205;  DB 6;  Length 217;
  Best Local Similarity   84.8%;  Pred. No. 1.5e-19;
  Matches   39;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |:|||||||:|||:||| :||| |||||||||||| ||||||||||
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Db         29 TVPLSRLFDHAMLQAHRAYQLAIDTYQEFEEAYILKEQKYSFLQNP 74


RESULT 7
Q07369
ID   Q07369      PRELIMINARY;      PRT;   217 AA.
AC   Q07369;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Chorionic somatomammotropin-3.
OS   Macaca mulatta (Rhesus macaque).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC   Cercopithecinae; Macaca.
OX   NCBI_TaxID=9544;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Midpregnancy placenta;
RX   MEDLINE=94008724; PubMed=8404617;
RA   Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT   "Cloning of four growth hormone/chorionic somatomammotropin-related
RT   complementary deoxyribonucleic acids differentially expressed during
RT   pregnancy in the rhesus monkey placenta.";
RL   Endocrinology 133:1744-1752(1993).
DR   EMBL; L16554; AAA18841.1; -.
DR   PIR; I67409; I67409.
DR   HSSP; P01241; 1AXI.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24874 MW;  F1EB6AFDBBA1B185 CRC64;

  Query Match             77.3%;  Score 201;  DB 6;  Length 217;
  Best Local Similarity   74.5%;  Pred. No. 5.2e-19;
  Matches   35;  Conservative    8;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |::|||||||| |::|||||||||||||||||: ||||||:|:| : ||
Db         28 PSVPLSRLFDNIMMQAHRLHQLAFDTYQEFEKTYIPKEKKHSLMGNP 74


RESULT 8
Q866T8
ID   Q866T8      PRELIMINARY;      PRT;   217 AA.
AC   Q866T8;
DT   01-JUN-2003 (TrEMBLrel. 24, Created)
DT   01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Placental lactogen PL-D.
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
```

```
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D.E., Barrera H.S.;
RT   "The GH-PL locus a hot-point between human and chimpanzee genomes.";
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY146628; AAN84508.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  25135 MW;  1EB7B89B8A12E4F4 CRC64;

  Query Match             77.3%;  Score 201;  DB 6;  Length 217;
  Best Local Similarity   82.2%;  Pred. No. 5.2e-19;
  Matches   37;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              |:|||||||:|||:||| |||| ||||||||||||||:|||||| :
Db         29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEEAYIPKDQKYSFLHD 73


RESULT 9
Q14407
ID   Q14407      PRELIMINARY;      PRT;   217 AA.
AC   Q14407;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Chorionic somatomammotropin CS-2 (Chorionic somatomammotropin hormone
DE   2).
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=89307277; PubMed=2744760;
RA   Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA   Seeburg P.H.;
RT   "The human growth hormone locus: nucleotide sequence, biology, and
RT   evolution.";
RL   Genomics 4:479-497(1989).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=91102558; PubMed=1980158;
RA   Vnencak-Jones C.L., Phillips J.A. III.;
RT   "Hot spots for growth hormone gene deletions in homologous regions
RT   outside of Alu repeats.";
RL   Science 250:1745-1748(1990).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Placenta;
RA   Strausberg R.;
```

```
RL   Submitted (JUL-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; J03071; AAA52553.1; -.
DR   EMBL; BC022044; AAH22044.1; -.
DR   EMBL; BC035965; AAH35965.1; -.
DR   PIR; E32435; E32435.
DR   HSSP; P01241; 1A22.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24994 MW;  39FAACDDB6B2E951 CRC64;

  Query Match             75.8%;  Score 197;  DB 4;  Length 217;
  Best Local Similarity   80.0%;  Pred. No. 1.8e-18;
  Matches   36;  Conservative    5;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              |:|||||||:|||:||| |||| |||||||| ||||:|||||| :
Db         29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHD 73


RESULT 10
Q8WND9
ID   Q8WND9      PRELIMINARY;      PRT;   217 AA.
AC   Q8WND9;
DT   01-MAR-2002 (TrEMBLrel. 20, Created)
DT   01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Growth hormone.
GN   GH-V.
OS   Ateles geoffroyi (Black-handed spider monkey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.
OX   NCBI_TaxID=9509;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT   "Independent duplication of the growth hormone gene in three
RT   Anthropoidean lineages.";
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF374235; AAL72287.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  25293 MW;  741745A1B75C053E CRC64;

  Query Match             75.0%;  Score 195;  DB 6;  Length 217;
  Best Local Similarity   77.1%;  Pred. No. 3.4e-18;
  Matches   37;  Conservative    5;  Mismatches    6;  Indels    0;  Gaps    0;
```

DR   [illegible]
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA; 24884 MW; A1663257499827D4 CRC64;

  Query Match   71.5%; Score 186; DB 6; Length 217;
  Best Local Similarity 77.8%; Pred. No. 5.6e-17;
  Matches   35; Conservative   4; Mismatches   6; Indels   0; Gaps   0;

Qy   4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              |:||||| |||:|| |||| |||||||||||||:|||||| :
Db   29 TVPLSRLFKEAMLQAHPAHQLAIDTYQEFEEAYIPKDQKYSFLHD 73

RESULT 12
Q8MI74
ID   Q8MI74   PRELIMINARY;   PRT;   217 AA.
AC   Q8MI74;
DT   01-OCT-2002 (TrEMBLrel. 22, Created)
DT   01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Growth hormone-like protein 6 precursor.
GN   GHLP6.
OS   Callithrix jacchus (Common marmoset).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.
OX   NCBI_TaxID=9483;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Wallis O.C., Wallis M.;

Qy   2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              || ||||||| :||||||:|||:||||||| || |||:||| ||:||
Db   27 FPRIPLSRLFGDAMLRAHQLHQVAFDTYQELEENCIPKKQKYFFLRNP 74

RESULT 11
Q866U0
ID   Q866U0   PRELIMINARY;   PRT;   217 AA.
AC   Q866U0;
DT   01-JUN-2003 (TrEMBLrel. 24, Created)
DT   01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Placental lactogen PL-B.
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D.E., Barrera H.S.;
RT   "The GH-PL locus a hot-point between human and chimpanzee genomes.";
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY146626; AAN84506.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.

```
RT   "Characterisation of the GH gene cluster in a new-world monkey, the
RT   marmoset (Callithrix jacchus).";
RL   J. Mol. Endocrinol. 0:0-0(2002).
DR   EMBL; AJ489811; CAD34012.1; -.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    217       GROWTH HORMONE-LIKE PROTEIN 6.
SQ   SEQUENCE   217 AA;  25177 MW;  5ECF148798278F1A CRC64;

  Query Match             65.4%;  Score 170;  DB 6;  Length 217;
  Best Local Similarity   68.1%;  Pred. No. 8.2e-15;
  Matches   32;  Conservative    7;  Mismatches    8;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              | ||||||| :||||| :|| || :||:|||:  :|||||| ||:||
Db         28 PRIPLSRLFGDAMLRARQLHHLALETYREFEKNCVPKEQKYFFLRNP 74


RESULT 13
O70615
ID   O70615      PRELIMINARY;      PRT;   216 AA.
AC   O70615;
DT   01-AUG-1998 (TrEMBLrel. 07, Created)
DT   01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Growth hormone precursor.
OS   Spalax leucodon ehrenbergi (Ehrenberg's mole rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;
OC   Nannospalax.
OX   NCBI_TaxID=30637;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=99124645; PubMed=9924177;
RA   Lioupis A., Nevo E., Wallis M.;
RT   "Cloning and characterisation of the gene encoding mole rat (Spalax
RT   ehrenbergi) growth hormone.";
RL   J. Mol. Endocrinol. 22:29-36(1999).
DR   EMBL; AJ005819; CAA06716.1; -.
DR   HSSP; P01241; 1AXI.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    216       GROWTH HORMONE.
SQ   SEQUENCE   216 AA;  24627 MW;  EEAB8A523BA0ADFE CRC64;
```

```
  Query Match             61.7%;  Score 160.5;  DB 11;  Length 216;
  Best Local Similarity   68.1%;  Pred. No. 1.6e-13;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| ||||: |:|| :||
Db         27 FPAMPLSNLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72


RESULT 14
Q9TV91
ID   Q9TV91      PRELIMINARY;      PRT;    52 AA.
AC   Q9TV91;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Growth hormone (Fragment).
GN   GH.
OS   Equus caballus (Horse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX   NCBI_TaxID=9796;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=99160468; PubMed=10051323;
RA   Caetano A.R., Pomp D., Murray J.D., Bowling A.T.;
RT   "Comparative mapping of 18 equine type I genes assigned by somatic
RT   cell hybrid analysis.";
RL   Mamm. Genome 10:271-276(1999).
DR   EMBL; AF097589; AAD25992.1; -.
DR   HSSP; P01241; 1HGU.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
FT   NON_TER       1      1
FT   NON_TER      52     52
SQ   SEQUENCE   52 AA;  5835 MW;  20A9E9E9139F9BBA CRC64;

  Query Match             61.3%;  Score 159.5;  DB 6;  Length 52;
  Best Local Similarity   68.1%;  Pred. No. 4.3e-14;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| ||||: |:|| :||
Db          6 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 51


RESULT 15
Q8MI73
ID   Q8MI73      PRELIMINARY;      PRT;   216 AA.
AC   Q8MI73;
DT   01-OCT-2002 (TrEMBLrel. 22, Created)
DT   01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Growth hormone precursor.
```

GN GH.
OS Delphinus delphis (Saddleback dolphin) (Black sea dolphin).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti; Delphinidae;
OC Delphinus.
OX NCBI_TaxID=9728;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RA Maniou Z., Wallis O.C., Wallis M.;
RT "Cloning and characterisation of the GH gene from the common dolphin
RT (Delphinus delphis).";
RL Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AJ492191; CAD37292.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Signal.
FT SIGNAL   1   26   POTENTIAL.
FT CHAIN   27   216   GROWTH HORMONE.
SQ SEQUENCE   216 AA; 24509 MW; 1EC467A84CCFEB02 CRC64;

  Query Match   61.3%; Score 159.5; DB 6; Length 216;
  Best Local Similarity   68.1%; Pred. No. 2.1e-13;
  Matches   32; Conservative   6; Mismatches   8; Indels   1; Gaps   1;

Qy   2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:||| ||||| |||:||| ||||: |:|| :||
Db   27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72

Search completed: July 15, 2004, 16:40:47
Job time : 17.8961 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:28:49 ; Search time 3.38246 Seconds
(without alignments)
754.314 Million cell updates/sec

Title: US-09-423-100-1
Perfect score: 260
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_42:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	255	98.1	217	1	SOMA_HUMAN	P01241 homo sapien
2	255	98.1	217	1	SOMA_MACMU	P33093 macaca mula
3	255	98.1	217	1	SOMA_PANTR	P58756 pan troglod
4	249	95.8	217	1	SOMA_CALJA	Q9gmb3 callithrix
5	249	95.8	217	1	SOMA_SAIBB	P58343 saimiri bol
6	236	90.8	217	1	SOM2_PANTR	P58757 pan troglod
7	228	87.7	217	1	SOM2_HUMAN	P01242 homo sapien
8	199	76.5	217	1	SOM2_MACMU	Q07370 macaca mula
9	197	75.8	217	1	PLL_HUMAN	P01243 homo sapien
10	161.5	62.1	216	1	SOMA_MOUSE	P06880 mus musculu
11	160.5	61.7	190	1	SOMA_BALBO	P33092 balaenopter
12	159.5	61.3	190	1	SOMA_LOXAF	P20392 loxodonta a
13	159.5	61.3	190	1	SOMA_VULVU	P10766 vulpes vulp
14	159.5	61.3	216	1	SOMA_CANFA	P33711 canis famil
15	159.5	61.3	216	1	SOMA_FELCA	P46404 felis silve
16	159.5	61.3	216	1	SOMA_HORSE	P01245 equus cabal
17	159.5	61.3	216	1	SOMA_MESAU	P37886 mesocricetu

18	159.5	61.3	216	1	SOMA_PIG	P01248 sus scrofa
19	159.5	61.3	216	1	SOMA_RABIT	P46407 oryctolagus
20	159.5	61.3	216	1	SOMA_RAT	P01244 rattus norv
21	159.5	61.3	217	1	SOMA_GALSE	Q9gka1 galago sene
22	159.5	61.3	217	1	SOMA_NYCPY	Q9gmb2 nycticebus
23	156.5	60.2	216	1	SOMA_MUSVI	P19795 mustela vis
24	155.5	59.8	190	1	SOMA_LAMPA	P37885 lama guanic
25	150	57.7	216	1	SOMA_MELGA	P22077 meleagris g
26	148	56.9	191	1	SOMA_CHEMY	P34005 chelonia my
27	145	55.8	215	1	SOMA_MONDO	Q9gl60 monodelphis
28	145	55.8	215	1	SOMA_TRIVU	O62754 trichosurus
29	144	55.4	190	1	SOM1_ACIGU	P26773 acipenser g
30	144	55.4	190	1	SOM2_ACIGU	P26774 acipenser g
31	144	55.4	216	1	SOMA_CHICK	P08998 gallus gall
32	142.5	54.8	217	1	SOMA_BOVIN	P01246 bos taurus
33	142.5	54.8	217	1	SOMA_CEREL	P56437 cervus elap
34	142.5	54.8	217	1	SOMA_SHEEP	P01247 ovis aries
35	142	54.6	217	1	SOMA_STRCA	Q9pwg3 struthio ca
36	140	53.8	190	1	SOMA_CRONO	P55755 crocodylus
37	140	53.8	216	1	SOMA_ANAPL	P11228 anas platyr
38	135.5	52.1	217	1	SOMA_BUBBU	O18938 bubalus bub
39	132	50.8	215	1	SOMA_RANCA	P10813 rana catesb
40	125	48.1	211	1	SOMA_LEPOS	P79885 lepisosteus
41	122	46.9	214	1	SOMA_XENLA	P12855 xenopus lae
42	116	44.6	183	1	SOMA_PRIGL	P34006 prionace gl
43	112	43.1	206	1	SOMA_PROAN	O73848 protopterus
44	111	42.7	213	1	SOMA_BUFMA	O73849 bufo marinu
45	104	40.0	208	1	SOMB_XENLA	P12856 xenopus lae

ALIGNMENTS

```
RESULT 1
SOMA_HUMAN
ID   SOMA_HUMAN      STANDARD;      PRT;   217 AA.
AC   P01241; Q14405; Q16631; Q9HBZ1; Q9UMJ7; Q9UNL5;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-MAR-1992 (Rel. 21, Last sequence update)
DT   10-OCT-2003 (Rel. 42, Last annotation update)
DE   Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE   hormone) (Growth hormone 1).
GN   GH1.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A. (ISOFORM 1).
RX   MEDLINE=80034477; PubMed=386281;
RA   Roskam W., Rougeon F.;
RT   "Molecular cloning and nucleotide sequence of the human growth
RT   hormone structural gene.";
RL   Nucleic Acids Res. 7:305-320(1979).
RN   [2]
RP   SEQUENCE FROM N.A. (ISOFORM 1).
RX   MEDLINE=79203293; PubMed=377496;
```

RA Martial J.A., Hallewell R.A., Baxter J.D., Goodman H.M.;
RT "Human growth hormone: complementary DNA cloning and expression in
RT bacteria.";
RL Science 205:602-607(1979).
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 1), AND POSSIBLE ALTERNATIVE SPLICING.
RX MEDLINE=82014939; PubMed=6269091;
RA Denoto F.M., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE=83182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).
RN [5]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
RA Gelinas R.E., Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [6]
RP SEQUENCE FROM N.A. (ISOFORM 3).
RC TISSUE=Pituitary;
RA Gu J., Huang Q.-H., Li N., Xu S.-H., Han Z.-G., Fu G., Chen Z.;
RT "A novel gene expressed in human pituitary.";
RL Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
RN [7]
RP SEQUENCE FROM N.A. (ISOFORM 4).
RC TISSUE=Pituitary;
RX MEDLINE=20402571; PubMed=10931946;
RA Hu R.-M., Han Z.-G., Song H.-D., Peng Y.-D., Huang Q.-H., Ren S.-X.,
RA Gu Y.-J., Huang C.-H., Li Y.-B., Jiang C.-L., Fu G., Zhang Q.-H.,
RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.,
RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,
RA Huang G.-Y., Chen Z., Chen M.-D., Chen J.-L.;
RT "Gene expression profiling in the human hypothalamus-pituitary-adrenal
RT axis and full-length cDNA cloning.";
RL Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548(2000).
RN [8]
RP SEQUENCE OF 1-26 FROM N.A.
RX MEDLINE=86137393; PubMed=3912261;
RA Gray G.L., Baldridge J.S., McKeown K.S., Heyneker H.L., Chang C.N.;
RT "Periplasmic production of correctly processed human growth hormone in
RT Escherichia coli: natural and bacterial signal sequences are
RT interchangeable.";
RL Gene 39:247-254(1985).
RN [9]
RP SEQUENCE OF 27-217.
RX MEDLINE=69289202; PubMed=5810834;
RA Li C.H., Dixon J.S., Liu W.-K.;
RT "Human pituitary growth hormone. XIX. The primary structure of the

RT hormone.";
RL Arch. Biochem. Biophys. 133:70-91(1969).
RN [10]
RP SEQUENCE OF 27-217, AND REVISIONS.
RX MEDLINE=72143935; PubMed=5144027;
RA Li C.H., Dixon J.S.;
RT "Human pituitary growth hormone. 32. The primary structure of the
RT hormone: revision.";
RL Arch. Biochem. Biophys. 146:233-236(1971).
RN [11]
RP REVISION.
RX MEDLINE=73092028; PubMed=4675454;
RA Bewley T.A., Dixon J.S., Li C.H.;
RT "Sequence comparison of human pituitary growth hormone, human
RT chorionic somatomammotropin, and ovine pituitary growth and
RT lactogenic hormones.";
RL Int. J. Pept. Protein Res. 4:281-287(1972).
RN [12]
RP SEQUENCE OF 27-61 AND 102-124.
RX MEDLINE=71139765; PubMed=5279046;
RA Niall H.D.;
RT "Revised primary structure for human growth hormone.";
RL Nature New Biol. 230:90-91(1971).
RN [13]
RP REVISIONS TO 119-120 AND 157-159.
RX MEDLINE=71153968; PubMed=5279528;
RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
RT "Sequences of pituitary and placental lactogenic and growth hormones:
RT evolution from a primordial peptide by gene reduplication.";
RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
RN [14]
RP REVISION.
RA Niall H.D.;
RT "The chemistry of the human lactogenic hormones.";
RL (In) Griffiths K. (eds.);
RL Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin,
RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
RN [15]
RP SEQUENCE OF 27-79 (ISOFORM 2).
RX MEDLINE=81117361; PubMed=7462247;
RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,
RA Turner C., Cary P.D., Crane-Robinson C.;
RT "The 20,000 molecular weight variant of human growth hormone.
RT Preparation and some physical and chemical properties.";
RL J. Biol. Chem. 256:2395-2401(1981).
RN [16]
RP SEQUENCE OF 46-80 (ISOFORM 2).
RX MEDLINE=80130196; PubMed=7356479;
RA Lewis U.J., Bonewald L.F., Lewis L.J.;
RT "The 20,000-dalton variant of human growth hormone: location of the
RT amino acid deletions.";
RL Biochem. Biophys. Res. Commun. 92:511-516(1980).
RN [17]
RP DEAMIDATION OF GLN-163 AND ASN-178.
RX MEDLINE=82052997; PubMed=7028740;
RA Lewis U.J., Singh R.N., Bonewald L.F., Seavey B.K.;
RT "Altered proteolytic cleavage of human growth hormone as a result of

RT deamidation.";
RL J. Biol. Chem. 256:11645-11650(1981).
RN [18]
RP REVIEW.
RX MEDLINE=99321812; PubMed=10393484;
RA Baumann G.;
RT "Growth hormone heterogeneity in human pituitary and plasma.";
RL Horm. Res. 51 Suppl. 1:2-6(1999).
RN [19]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=88190073; PubMed=3447173;
RA Cohen F.E., Kuntz I.D.;
RT "Prediction of the three-dimensional structure of human growth
RT hormone.";
RL Proteins 2:162-166(1987).
RN [20]
RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
RX MEDLINE=92196577; PubMed=1549776;
RA de Vos A.M., Ultsch M., Kossiakoff A.A.;
RT "Human growth hormone and extracellular domain of its receptor:
RT crystal structure of the complex.";
RL Science 255:306-312(1992).
RN [21]
RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
RX MEDLINE=95075462; PubMed=7984244;
RA Somers W., Ultsch M., de Vos A.M., Kossiakoff A.A.;
RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
RL Nature 372:478-481(1994).
RN [22]
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,
RA Pavlovsk A.G., Wlodawer A.;
RT "The crystal-structure of wild-type growth-hormone at 2.5-A
RT resolution.";
RL Protein Pept. Lett. 2:333-340(1995).
RN [23]
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RX MEDLINE=97113023; PubMed=8943276;
RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,
RA Norstedt G.;
RT "Crystal structure of an antagonist mutant of human growth hormone,
RT G120R, in complex with its receptor at 2.9-A resolution.";
RL J. Biol. Chem. 271:32197-32203(1996).
RN [24]
RP VARIANT KOWARSKI SYNDROME CYS-103.
RX MEDLINE=96150232; PubMed=8552145;
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;
RT "Short stature caused by a mutant growth hormone.";
RL New Engl. J. Med. 334:432-436(1996).
RN [25]
RP ERRATUM.
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;
RL New Engl. J. Med. 334:1207-1207(1996).
RN [26]
RP VARIANT KOWARSKI SYNDROME GLY-138.
RX MEDLINE=97426478; PubMed=9276733;
RA Takahashi Y., Shirono H., Arisaka O., Takahashi K., Yagi T., Koga J.,

```
RA   Kaji H., Okimura Y., Abe H., Tanaka T., Chihara K.;
RT   "Biologically inactive growth hormone caused by an amino acid
RT   substitution.";
RL   J. Clin. Invest. 100:1159-1165(1997).
RN   [27]
RP   VARIANT CYS-105.
RX   MEDLINE=99318093; PubMed=10391209;
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  Query Match             98.1%;  Score 255;  DB 1;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 5.6e-25;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74
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RESULT 2
SOMA_MACMU
ID   SOMA_MACMU     STANDARD;      PRT;   217 AA.
AC   P33093;
DT   01-OCT-1993 (Rel. 27, Created)
DT   01-OCT-1994 (Rel. 30, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE   hormone) (Growth hormone 1).
GN   GH1.
OS   Macaca mulatta (Rhesus macaque).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC   Cercopithecinae; Macaca.
OX   NCBI_TaxID=9544;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=94008724; PubMed=8404617;
RA   Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT   "Cloning of four growth hormone/chorionic somatomammotropin-related
RT   complementary deoxyribonucleic acids differentially expressed during
RT   pregnancy in the rhesus monkey placenta.";
RL   Endocrinology 133:1744-1752(1993).
RN   [2]
RP   SEQUENCE OF 27-217.
RX   MEDLINE=86129460; PubMed=3080959;
RA   Li C.H., Chung D., Lahm H.W., Stein S.;
RT   "The primary structure of monkey pituitary growth hormone.";
RL   Arch. Biochem. Biophys. 245:287-291(1986).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between  the Swiss Institute of Bioinformatics  and the  EMBL outstation -
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CC   the European Bioinformatics Institute.  There are no  restrictions on  its
CC   use  by  non-profit  institutions as long  as its content  is  in  no  way
CC   modified and this statement is not removed.  Usage  by  and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; L16556; AAA18842.1; -.
DR   PIR; I67410; I67410.
DR   HSSP; P01241; 1AXI.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    217       SOMATOTROPIN.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
FT   CONFLICT    100    100       E -> Q (IN REF. 2).
FT   CONFLICT    179    179       N -> D (IN REF. 2).
SQ   SEQUENCE   217 AA;  24913 MW;  2C5180341EEC46D0 CRC64;

  Query Match             98.1%;  Score 255;  DB 1;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 5.6e-25;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 3
SOMA_PANTR
ID   SOMA_PANTR     STANDARD;      PRT;   217 AA.
AC   P58756;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE   hormone) (Growth hormone 1).
GN   GH1.
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT   "Independent duplication of the growth hormone gene in three
RT   Anthropoidean lineages.";
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
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CC       tissues (By similarity).
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF374232; AAL72284.1; -.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    217       SOMATOTROPIN.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
SQ   SEQUENCE   217 AA;  24843 MW;  FEA295EDE0518674 CRC64;

  Query Match             98.1%;  Score 255;  DB 1;  Length 217;
  Best Local Similarity   100.0%;  Pred. No. 5.6e-25;
  Matches   48;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 4
SOMA_CALJA
ID   SOMA_CALJA     STANDARD;      PRT;   217 AA.
AC   Q9GMB3;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   GH1.
OS   Callithrix jacchus (Common marmoset).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae;
OC   Callithrix.
OX   NCBI_TaxID=9483;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Wallis O.C., Wallis M.;
RT   "Cloning and characterisation of a putative growth hormone encoding
RT   gene from the marmoset (Callithrix jacchus).";
RL   Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
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CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues (By similarity).
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AJ297563; CAC03481.1; -.
DR   HSSP; P01241; 1A22.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    217       SOMATOTROPIN.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
SQ   SEQUENCE   217 AA;  24959 MW;  E102151A12CE6192 CRC64;

  Query Match             95.8%;  Score 249;  DB 1;  Length 217;
  Best Local Similarity   97.9%;  Pred. No. 3.2e-24;
  Matches   47;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db         27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 5
SOMA_SAIBB
ID   SOMA_SAIBB     STANDARD;      PRT;   217 AA.
AC   P58343;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   GH1.
OS   Saimiri boliviensis boliviensis (Bolivian squirrel monkey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
OX   NCBI_TaxID=39432;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=21265430; PubMed=11371582;
RA   Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;
RT   "Episodic evolution of growth hormone in primates and emergence of the
RT   species specificity of human growth hormone receptor.";
RL   Mol. Biol. Evol. 18:945-953(2001).
```

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CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues (By similarity).
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF339060; AAK62287.1; -.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    217       SOMATOTROPIN.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
SQ   SEQUENCE   217 AA;  24864 MW;  9515289992C529F7 CRC64;

  Query Match             95.8%;  Score 249;  DB 1;  Length 217;
  Best Local Similarity   97.9%;  Pred. No. 3.2e-24;
  Matches   47;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||||| ||||||||||||||||||||||||||||||||||||||||
Db         27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 74


RESULT 6
SOM2_PANTR
ID   SOM2_PANTR     STANDARD;      PRT;   217 AA.
AC   P58757;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Growth hormone variant precursor (GH-V) (Placenta-specific growth
DE   hormone) (Growth hormone 2).
GN   GH2.
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT   "Independent duplication of the growth hormone gene in three
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RT   Anthropoidean lineages.";
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- TISSUE SPECIFICITY: Expressed in the placenta.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF374233; AAL72285.1; -.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Placenta; Signal; Glycoprotein.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    217       GROWTH HORMONE VARIANT.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
SQ   SEQUENCE   217 AA;  24990 MW;  1592A429075677DE CRC64;

  Query Match             90.8%;  Score 236;  DB 1;  Length 217;
  Best Local Similarity   93.8%;  Pred. No. 1.4e-22;
  Matches   45;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
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Db         27 FPTIPLSRLFDNAMLRAHRLYQLAYDTYQEFEEAYILKEQKYSFLQNP 74


RESULT 7
SOM2_HUMAN
ID   SOM2_HUMAN     STANDARD;      PRT;   217 AA.
AC   P01242; P09587;
DT   21-JUL-1986 (Rel. 01, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   10-OCT-2003 (Rel. 42, Last annotation update)
DE   Growth hormone variant precursor (GH-V) (Placenta-specific growth
DE   hormone) (Growth hormone 2).
GN   GH2.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
```

RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=83182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).
RX MEDLINE=88243769; PubMed=3379057;
RA Cooke N.E., Ray J., Emery J.G., Liebhaber S.A.;
RT "Two distinct species of human growth hormone-variant mRNA in the
RT human placenta predict the expression of novel growth hormone
RT proteins.";
RL J. Biol. Chem. 263:9001-9006(1988).
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=89024984; PubMed=2460050;
RA Igout A., Scippo M.L., Frankenne F., Hennen G.;
RT "Cloning and nucleotide sequence of placental hGH-V cDNA.";
RL Arch. Int. Physiol. Biochim. 96:63-67(1988).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
RA Gelinas R.E., Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [5]
RP SEQUENCE FROM N.A.
RC TISSUE=Placenta;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [6]
RP REVIEW.
RX MEDLINE=99321812; PubMed=10393484;
RA Baumann G.;
RT "Growth hormone heterogeneity in human pituitary and plasma.";

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RL   Horm. Res. 51 Suppl. 1:2-6(1999).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBUNIT: Monomer, dimer, trimer, tetramer and pentamer, disulfide-
CC       linked or non-covalently associated, in homopolymeric and
CC       heteropolymeric combinations. Can also form a complex either with
CC       GHBP or with the alpha2-macroglobulin complex.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- ALTERNATIVE PRODUCTS:
CC       Event=Alternative splicing; Named isoforms=2;
CC       Name=1; Synonyms=GH-V1;
CC         IsoId=P01242-1; Sequence=Displayed;
CC       Name=2; Synonyms=GH-V2;
CC         IsoId=P01242-2; Sequence=VSP_006203;
CC         Note=No experimental confirmation available;
CC   -!- TISSUE SPECIFICITY: Expressed in the placenta.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; K00470; AAA98619.1; -.
DR   EMBL; J03756; AAB59547.1; -.
DR   EMBL; J03756; AAB59548.1; -.
DR   EMBL; M38451; AAA35891.1; -.
DR   EMBL; J03071; AAA52552.1; -.
DR   EMBL; BC020760; AAH20760.1; -.
DR   PIR; A28072; STHUV2.
DR   PIR; D32435; STHUV.
DR   HSSP; P01241; 1A22.
DR   Genew; HGNC:4262; GH2.
DR   MIM; 139240; -.
DR   GO; GO:0005180; F:peptide hormone; TAS.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Placenta; Signal; Glycoprotein; Alternative splicing;
KW   Polymorphism.
FT   SIGNAL        1     26
FT   CHAIN        27    217       GROWTH HORMONE VARIANT.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
FT   CARBOHYD    166    166       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   VARSPLIC    153    217       RLEDGSPRTGQIFNQSYSKFDTKSHNDDALLKNYGLLYCFR
FT                                KDMDKVETFLRIVQCRSVEGSCGF -> VRVAPGIPNPGAP
FT                                LASRDWGEKHCCPLFSSQALTQENSPYSSFPLVNPPGLSLQ
```

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FT                                PGGEGGKWMNERGREQCPSAWPLLLFLHFAEAGRWQPPDWA
FT                                DLQSVLQQV (in isoform 2).
FT                                /FTId=VSP_006203.
FT   VARIANT      90     90       R -> W (in dbSNP:5389).
FT                                /FTId=VAR_014591.
FT   CONFLICT    109    109       I -> T (IN REF. 2).
SQ   SEQUENCE   217 AA;  24999 MW;  7B9324698E822F96 CRC64;

  Query Match             87.7%;  Score 228;  DB 1;  Length 217;
  Best Local Similarity   91.7%;  Pred. No. 1.4e-21;
  Matches   44;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              |||||||||||||||| ||:|||:|||||||||| ||||||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNP 74


RESULT 8
SOM2_MACMU
ID   SOM2_MACMU     STANDARD;      PRT;   217 AA.
AC   Q07370; Q28494;
DT   01-NOV-1997 (Rel. 35, Created)
DT   01-NOV-1997 (Rel. 35, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Growth hormone variant precursor (GH-V) (Placenta-specific growth
DE   hormone) (Growth hormone 2).
GN   GH2.
OS   Macaca mulatta (Rhesus macaque).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC   Cercopithecinae; Macaca.
OX   NCBI_TaxID=9544;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Golos T.G.;
RL   Submitted (JAN-1994) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Placenta;
RX   MEDLINE=94008724; PubMed=8404617;
RA   Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT   "Cloning of four growth hormone/chorionic somatomammotropin-related
RT   complementary deoxyribonucleic acids differentially expressed during
RT   pregnancy in the rhesus monkey placenta.";
RL   Endocrinology 133:1744-1752(1993).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
CC   -!- TISSUE SPECIFICITY: Expressed in the placenta.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; U02293; AAA03391.1; -.
DR   EMBL; L16555; AAA20180.1; -.
DR   PIR; I67411; I67411.
DR   HSSP; P01241; 1HGU.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Placenta; Signal; Glycoprotein.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    217       GROWTH HORMONE VARIANT.
FT   DISULFID     79    191       BY SIMILARITY.
FT   DISULFID    208    215       BY SIMILARITY.
FT   CONFLICT     57     57       L -> F (IN REF. 2).
FT   CONFLICT    152    152       E -> G (IN REF. 2).
SQ   SEQUENCE   217 AA;  25221 MW;  8DB116CBC24EA090 CRC64;

  Query Match             76.5%;  Score 199;  DB 1;  Length 217;
  Best Local Similarity   77.1%;  Pred. No. 6.3e-18;
  Matches   37;  Conservative    5;  Mismatches    6;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49
              ||||||| ||: |: ||| ||:|||||| : |||||||||||||:||
Db         27 FPTIPLSWLFNTAVFRAHHLHKLAFDTYPKLEEAYIPKEQKYSFLRNP 74


RESULT 9
PLL_HUMAN
ID   PLL_HUMAN      STANDARD;      PRT;   217 AA.
AC   P01243;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-APR-1988 (Rel. 07, Last sequence update)
DT   15-MAR-2004 (Rel. 43, Last annotation update)
DE   Lactogen precursor (Choriomammotropin) (Chorionic somatomammotropin).
GN   CSH1 AND CSH2.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A. (GENE CSH1).
RX   MEDLINE=85030426; PubMed=6208192;
RA   Selby M.J., Barta A., Baxter J.D., Bell G.I., Eberhardt N.L.;
RT   "Analysis of a major human chorionic somatomammotropin gene. Evidence
RT   for two functional promoter elements.";
RL   J. Biol. Chem. 259:13131-13138(1984).
RN   [2]
RP   SEQUENCE FROM N.A. (GENE CSH2).
RX   MEDLINE=87161235; PubMed=3030680;
RA   Hirt H., Kimelman J., Birnbaum M.J., Chen E.Y., Seeburg P.H.,
```

RA Eberhardt N.L., Barta A.;
RT "The human growth hormone gene locus: structure, evolution, and
RT allelic variations.";
RL DNA 6:59-70(1987).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=83160916; PubMed=6300056;
RA Barrera-Saldana H.A., Seeburg P.H., Saunders G.F.;
RT "Two structurally different genes produce the same secreted human
RT placental lactogen hormone.";
RL J. Biol. Chem. 258:3787-3793(1983).
RN [4]
RP SEQUENCE FROM N.A. (GENES CSH1 AND CSH2).
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [5]
RP SEQUENCE.
RX MEDLINE=83182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).
RN [6]
RP SEQUENCE FROM N.A.
RC TISSUE=Placenta, and Uterus;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [7]
RP SEQUENCE OF 50-217 FROM N.A.
RX MEDLINE=78071761; PubMed=593368;
RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
RT "Construction and analysis of recombinant DNA for human chorionic
RT somatomammotropin.";
RL Nature 270:494-499(1977).

RN [8]
RP SEQUENCE OF 27-217.
RX MEDLINE=73201971; PubMed=4712450;
RA Li C.H., Dixon J.S., Chung D.;
RT "Amino acid sequence of human chorionic somatomammotropin.";
RL Arch. Biochem. Biophys. 155:95-110(1973).
RN [9]
RP SEQUENCE OF 27-117.
RX MEDLINE=72016313; PubMed=5286363;
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RT "Amino-acid sequence of human placental lactogen.";
RL Nature New Biol. 233:59-61(1971).
RN [10]
RP ERRATUM.
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RL Nature New Biol. 235:64-64(1972).
RN [11]
RP INTERCHAIN DISULFIDE BONDS.
RX MEDLINE=79173081; PubMed=438159;
RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;
RT "Identification of the interchain disulfide bonds of dimeric human
RT placental lactogen.";
RL J. Biol. Chem. 254:3782-3787(1979).
CC -!- FUNCTION: Similar to that of somatotropin.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- MISCELLANEOUS: The sequence of CSH1 is shown.
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

DR EMBL; V00573; CAA23836.1; -.
DR EMBL; J00289; AAA98747.1; -.
DR EMBL; K02401; AAA52115.1; -.
DR EMBL; M15894; AAA52116.1; -.
DR EMBL; J03071; AAA52551.1; -.
DR EMBL; J00118; AAA98621.1; -.
DR EMBL; BC002717; AAH02717.1; -.
DR EMBL; BC005921; AAH05921.1; -.
DR EMBL; BC020756; AAH20756.1; -.
DR PIR; A26449; A26449.
DR PIR; C32435; LCHUC.
DR HSSP; P01241; 1A22.
DR Genew; HGNC:2440; CSH1.
DR Genew; HGNC:2441; CSH2.
DR MIM; 150200; -.
DR GO; GO:0007565; P:pregnancy; TAS.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.

```
KW   Hormone; Placenta; Multigene family; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    217       LACTOGEN.
FT   DISULFID     79    191
FT   DISULFID    208    215
FT   DISULFID    208    208       INTERCHAIN (WITH C-215 IN A DIMER).
FT   DISULFID    215    215       INTERCHAIN (WITH C-208 IN A DIMER).
FT   VARIANT       3      3       P -> A (IN CSH2).
FT                                /FTId=VAR_007166.
FT   VARIANT     104    105       IS -> L (IN CSH2).
FT                                /FTId=VAR_007167.
FT   CONFLICT     84     84       I -> T (IN REF. 9).
FT   CONFLICT     95     95       MISSING (IN REF. 9).
FT   CONFLICT    116    116       MISSING (IN REF. 9).
FT   CONFLICT    134    136       SDD -> BBS (IN REF. 9).
SQ   SEQUENCE   217 AA;  25020 MW;  235B0DC7A713F431 CRC64;

  Query Match             75.8%;  Score 197;  DB 1;  Length 217;
  Best Local Similarity   80.0%;  Pred. No. 1.1e-17;
  Matches   36;  Conservative    5;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              |:|||||||:|||:||| |||| |||||||| ||||:|||||| :
Db         29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHD 73


RESULT 10
SOMA_MOUSE
ID   SOMA_MOUSE     STANDARD;      PRT;   216 AA.
AC   P06880;
DT   01-JAN-1988 (Rel. 06, Created)
DT   01-JAN-1988 (Rel. 06, Last sequence update)
DT   15-MAR-2004 (Rel. 43, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   GH1 OR GH.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85261358; PubMed=2991252;
RA   Linzer D.I.H., Talamantes F.;
RT   "Nucleotide sequence of mouse prolactin and growth hormone mRNAs and
RT   expression of these mRNAs during pregnancy.";
RL   J. Biol. Chem. 260:9574-9579(1985).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=FZTDU; TISSUE=Liver;
RX   MEDLINE=96194803; PubMed=8647448;
RA   Das P., Meyer L., Seyfert H.-M., Brockmann G., Schwerin M.;
RT   "Structure of the growth hormone-encoding gene and its promoter in
RT   mice.";
RL   Gene 169:209-213(1996).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Pituitary;
```

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RX   MEDLINE=22388257; PubMed=12477932;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length
RT   human and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X02891; CAA26650.1; -.
DR   EMBL; Z46663; CAA86658.1; -.
DR   EMBL; BC061157; AAH61157.1; -.
DR   PIR; B23911; STMS.
DR   HSSP; P01246; 1BST.
DR   MGD; MGI:95707; Gh.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    216       SOMATOTROPIN.
FT   DISULFID     78    189       BY SIMILARITY.
FT   DISULFID    206    214       BY SIMILARITY.
SQ   SEQUENCE   216 AA;  24716 MW;  98666A3AE25D65FC CRC64;

  Query Match             62.1%;  Score 161.5;  DB 1;  Length 216;
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  Best Local Similarity   68.1%;  Pred. No. 3.3e-13;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| ||||: |:|| :||
Db         27 FPAMPLSSLFSNAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72


RESULT 11
SOMA_BALBO
ID   SOMA_BALBO     STANDARD;      PRT;   190 AA.
AC   P33092;
DT   01-OCT-1993 (Rel. 27, Created)
DT   01-OCT-1993 (Rel. 27, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin (Growth hormone).
GN   GH1.
OS   Balaenoptera borealis (Sei whale).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
OC   Balaenopteridae; Balaenoptera.
OX   NCBI_TaxID=9768;
RN   [1]
RP   SEQUENCE.
RX   MEDLINE=83000569; PubMed=7115813;
RA   Yudaev N.A., Pankov Y.A., Bulatov A.A., Osipova T.A.;
RT   "Amino acid sequence of seiwhale somatotropin.";
RL   Biokhimiia 47:1059-1069(1982).
RN   [2]
RP   PRELIMINARY PARTIAL SEQUENCE.
RA   Osipova T.A., Bulatov A.A., Pankov Y.A.;
RT   "Structural studies of tryptic peptides from large cyanogen bromide
RT   fragments of sei whale (Balalnoptera borealis) somatotropin.";
RL   Bioorg. Khim. 4:1589-1599(1978).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
DR   PIR; JN0387; JN0387.
DR   PIR; PN0140; PN0140.
DR   HSSP; P01241; 1AXI.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary.
FT   DISULFID     52    163       BY SIMILARITY.
FT   DISULFID    180    188       BY SIMILARITY.
SQ   SEQUENCE   190 AA;  21835 MW;  09FBFF6DB14A75D6 CRC64;

  Query Match             61.7%;  Score 160.5;  DB 1;  Length 190;
  Best Local Similarity   68.1%;  Pred. No. 3.9e-13;
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  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:||| ||:|| |||:||| |||| |:| ||||
Db          1 FPAMPLSSLFANAVLRAQHLHELAADTYKEFERAYIPEGQRY-FLQN 46


RESULT 12
SOMA_LOXAF
ID   SOMA_LOXAF     STANDARD;      PRT;   190 AA.
AC   P20392;
DT   01-FEB-1991 (Rel. 17, Created)
DT   01-FEB-1991 (Rel. 17, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin (Growth hormone).
GN   GH1.
OS   Loxodonta africana (African elephant).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Proboscidea; Elephantidae; Loxodonta.
OX   NCBI_TaxID=9785;
RN   [1]
RP   SEQUENCE.
RA   Hulmes J.D., Miedel M.C., Li C.H., Pan Y.C.E.;
RT   "Primary structure of elephant growth hormone.";
RL   Int. J. Pept. Protein Res. 33:368-372(1989).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
DR   PIR; JK0219; JK0219.
DR   HSSP; P01246; 1BST.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary.
FT   DISULFID     52    163       BY SIMILARITY.
FT   DISULFID    180    188       BY SIMILARITY.
SQ   SEQUENCE   190 AA;  21761 MW;  05B860813DB741F2 CRC64;

  Query Match             61.3%;  Score 159.5;  DB 1;  Length 190;
  Best Local Similarity   68.1%;  Pred. No. 5.2e-13;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| |||| |:|| :||
Db          1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 46


RESULT 13
SOMA_VULVU
ID   SOMA_VULVU     STANDARD;      PRT;   190 AA.
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AC   P10766;
DT   01-JUL-1989 (Rel. 11, Created)
DT   01-JUL-1989 (Rel. 11, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin (Growth hormone).
GN   GH1.
OS   Vulpes vulpes (Red fox).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Vulpes.
OX   NCBI_TaxID=9627;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=Pituitary;
RX   MEDLINE=89254275; PubMed=2722401;
RA   Li C.H., Izdebski J., Chung D.;
RT   "Primary structure of fox pituitary growth hormone.";
RL   Int. J. Pept. Protein Res. 33:70-72(1989).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
DR   HSSP; P01246; 1BST.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary.
FT   DISULFID     52    163       BY SIMILARITY.
FT   DISULFID    180    188       BY SIMILARITY.
SQ   SEQUENCE   190 AA;  21731 MW;  14F37B9C1CBB802C CRC64;

  Query Match             61.3%;  Score 159.5;  DB 1;  Length 190;
  Best Local Similarity   68.1%;  Pred. No. 5.2e-13;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| ||||: |:|| :||
Db          1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 46


RESULT 14
SOMA_CANFA
ID   SOMA_CANFA     STANDARD;      PRT;   216 AA.
AC   P33711; Q9TQT6;
DT   01-FEB-1994 (Rel. 28, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   GH1 OR GH.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
```

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OX   NCBI_TaxID=9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=94266166; PubMed=8206387;
RA   Ascacio-Martinez J.A., Barrera-Saldana H.A.;
RT   "A dog growth hormone cDNA codes for a mature protein identical to
RT   pig growth hormone.";
RL   Gene 143:277-280(1994).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   van Leeuwen I.S., Teske E., van Garderen E., Rutteman G.R., Mol J.A.;
RT   "Extrapituitary growth hormone expression in the dog is initiated at
RT   the normal pituitary transcription start site in the mammary gland and
RT   at multiple upstream sites in lymphoid cells.";
RL   Submitted (MAR-1997) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Mammary gland;
RX   MEDLINE=99337113; PubMed=10411306;
RA   Lantinga-van Leeuwen I.S., Oudshoorn M., Mol J.A.;
RT   "Canine mammary growth hormone gene transcription initiates at the
RT   pituitary-specific start site in the absence of Pit-1.";
RL   Mol. Cell. Endocrinol. 150:121-128(1999).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Z23067; CAA80601.1; -.
DR   EMBL; U92533; AAF21502.1; -.
DR   EMBL; AF069071; AAD43366.1; -.
DR   PIR; I46145; I46145.
DR   HSSP; P01246; 1BST.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    216       SOMATOTROPIN.
FT   DISULFID     78    189       BY SIMILARITY.
FT   DISULFID    206    214       BY SIMILARITY.
FT   CONFLICT      4      4       S -> G (IN REF. 1).
FT   CONFLICT      7      7       N -> T (IN REF. 1).
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SQ   SEQUENCE   216 AA;  24468 MW;  A8AD1DD59F1DAAED CRC64;

  Query Match             61.3%;  Score 159.5;  DB 1;  Length 216;
  Best Local Similarity   68.1%;  Pred. No. 6e-13;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| ||||: |:|| :||
Db         27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72


RESULT 15
SOMA_FELCA
ID   SOMA_FELCA     STANDARD;      PRT;   216 AA.
AC   P46404;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   GH1.
OS   Felis silvestris catus (Cat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX   NCBI_TaxID=9685;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Pituitary;
RX   MEDLINE=96194906; PubMed=8654953;
RA   Warren W.C., Bentle K.A., Bogosian G.;
RT   "Cloning of the cDNAs coding for cat growth hormone and prolactin.";
RL   Gene 168:247-249(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Pituitary;
RX   MEDLINE=95369713; PubMed=7642118;
RA   Castro-Peralta F., Barrera-Saldana H.A.;
RT   "Cloning and sequencing of cDNA encoding the cat growth hormone.";
RL   Gene 160:311-312(1995).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U25973; AAA67294.1; -.
DR   EMBL; U13390; AAA96142.1; -.
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DR   PIR; JC4632; JC4632.
DR   HSSP; P01246; 1BST.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    216       SOMATOTROPIN.
FT   DISULFID     78    189       BY SIMILARITY.
FT   DISULFID    206    214       BY SIMILARITY.
FT   CONFLICT      7      7       N -> T (IN REF. 2).
FT   CONFLICT     26     26       T -> A (IN REF. 2).
FT   CONFLICT    159    159       G -> A (IN REF. 2).
FT   CONFLICT    181    181       L -> P (IN REF. 2).
SQ   SEQUENCE   216 AA;  24454 MW;  05820239A7D292C6 CRC64;

  Query Match             61.3%;  Score 159.5;  DB 1;  Length 216;
  Best Local Similarity   68.1%;  Pred. No. 6e-13;
  Matches   32;  Conservative    6;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQN 48
              || :||| || ||:|||  ||||| |||:||| ||||: |:|| :||
Db         27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72


Search completed: July 15, 2004, 16:36:24
Job time : 10.3825 secs
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